AFRP 85-1 VOL 22 NO 3 Fall 1981

air force engineering & services quarterly

Needed:
Managers, Engineers,
Leaders ..... Page 4

Special Report:
Education with
Industry ..... Page 28

From the Director

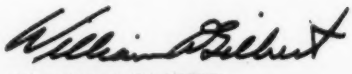
We of Engineering and Services Community are intensely proud of the professionalism of our military and civilian forces throughout the world. That professionalism is a product of quality individuals, carefully trained, educated, and properly exposed to the challenges we face through field training and exercises. This issue of the **Quarterly** is dedicated to education and training.

One partner in the development of a professional force is the Air Training Command, responsible for entry-level training, the Technical Training Centers, and the Air University. The latter controls our greatest single officer acquisition resource, the Air Force Reserve Officer Training Corps; our Air Force professional military education and the Air Force Institute of Technology.

At AFIT, the School of Civil Engineering is responsible for professional education of our officers and officer-grade civilians. AFIT administers our graduate-level degree programs offered at civilian institutions and at Wright-Patterson, including several unique programs for our engineer managers. A novel AFIT program offers our officers a tour with civilian industry, a personal approach to technology transfer and professional growth. AFIT is also the institution reponsible for our Airman Education and Commissioning Program, through which qualified airmen are offered both a degree opportunity and a commission, many in fields appropriate to Engineering and Services.

Training effort at the local level frequently is from resources otherwise dedicated to meeting our daily responsibilities. this ranges from standardizing practices and upgrading technical skills in the local classroom to field training. At one end of the field training scale this encompasses local Prime BEEF and Prime RIBS readiness training. At the top end, we participate in exercises which employ full-scale, multi-service forces engaged in the most realistic training medium we have short of war. Here our Engineering and Services partnership is with the operating commands, as we prepare to deliver the essential wartime mission support called for in our charter.

We cannot in one issue fully cover each aspect of this important force in our lines. But we can focus on selected segments and gain insight and understanding. In this issue of the **Quarterly**, while we increase your awareness of the importance of training and education, let us remember that at every level we have but a single goal — insuring that the capacity of our people is appropriate to the challenge.



WILLIAM D. GILBERT
Major General, USAF
Director of Engineering and Services

This issue is dedicated to education and training, enlarging and refining the capacity to serve.

engineering & services

Air Force
Engineering and Services
Quarterly

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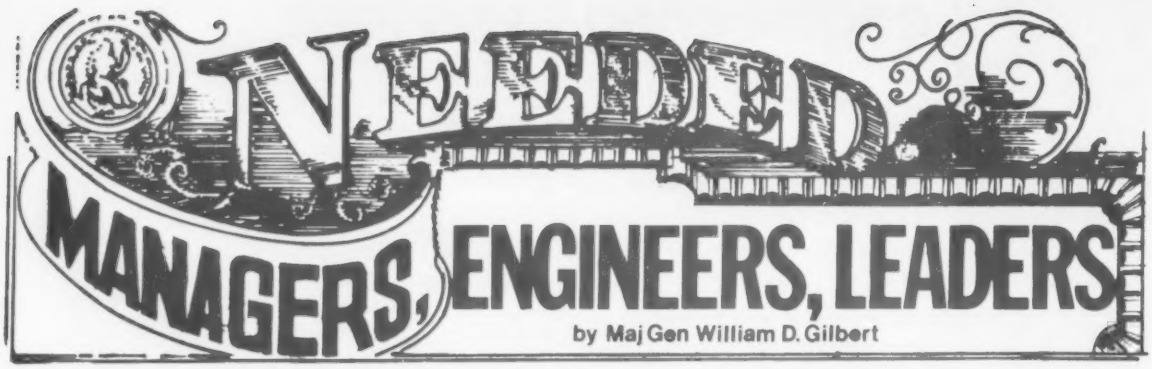


by Maj Gen William D. Gilbert

Engineers pride themselves for being the facilitators of the world. We take the dreams, needs and concepts of government, industry and private institutions and make them achievable, practical realities.

In the Air Force, our engineering people provide the fundamental support necessary to enable our first-line combat-ready units to operate even in remote areas of the world. We insure the capabilities of our bases at home to perform their vital strategic and supporting missions. We pride ourselves in offering an engineered approach to problem solving and achieving national goals.

As professionals, we have developed a "go anywhere, do anything" attitude. Even when faced with monumental tasks, at home or overseas, our people have always responded in a manner which has earned the respect and admiration of our national leadership.

Are we providing the full measure of our unique capacities? By asking this, I do not imply that there is one professional who is less than dedicated; that there is one of our number who is not contributing to the full measure when called upon. What I do mean to address is **leadership**; not the abilities of our people to get the job done, but the special ability to seek positions of responsibility and authority, and expand the universe of Engineering and Services to the decision making process at the highest levels of authority.

It is imperative that our people be capable of assuming positions of leadership. There are engineering solutions to many of the challenges we face as a nation. Therefore, we must demonstrate a presence and an authority when concepts are evolving. And, this means being there as a part of the decision-making process.

Only rarely will we get there unless we have the demonstrated capacity to manage. It is too convenient and easy to characterize members of the professional community as consultants upon demand. This promotes professional stratification by discipline, as each seeks to offer a unique service or capability. Because many of the subordinate professions which make up the whole of our professional community are thus becoming increasingly specialized, there is an intensity of application in our beginning years which may be in itself limiting to professional growth.

Look at the professional requirements of the Center—environmentalists, energy specialists, research and development experts; pavements, electrical generation and distribution, fire suppression —to name but a few. In each of these areas, there have been major contributions to the abilities of the Air Force to function; giving to management the necessary quantitative and properly engineered solution. In some of these cases, the solution could have been achieved in advance of the problem. We have people who are sufficiently expert to anticipate and predict the nature of the problem, and who can either avoid it or solve it in the conceptual phases.

". . . one of the nation's great national resources — our engineering talent . . ."

The economies to the nation are obvious. If the thrust or direction of a project can be aimed toward the practical and achievable, and away from the known engineering problem areas, we will benefit. This means harnessing one of the nation's great national resources—our engineering talent, skill and professionalism as managers.

Many of our most successful industrial families use an engineering approach: chemicals, communications, information processing and aerospace. In the acquisition and processing of chemicals, particularly petroleum and petrochemicals, the engineering is an essential ingredient. Communications lives on the capacity to deliver dependable services where and when needed, and frequently rides a wave crest of research, development, facilities, manufacture, application and marketing, mov-

ing almost as a unit. Information processing and data systems have reached the dimensions of a technological explosion, in which R&D engineering and design are but one part of the equation. Delivering a new product to the customer's workplace, making it do the job, and properly supporting the machine are essential for continued success. Aerospace technology clearly depends upon engineers to provide the capabilities to launch, recover, sustain and maintain each new system. Engineering people have earned positions of prestige and authority in the managerial hierarchy of aerospace firms.

ENGINEERS MUST LEARN THE "ABC'S" OF POWER

Although the engineers number more than a million — far more than lawyers — it is principally the lawyers, along with economists and doctors, who operate the levels of power.

This situation now is approaching criticality because present-day technical realities, many fraught with dangerous consequences if not properly assessed, do not reach decision makers.

Scrambling to maintain prestige and power, they block the intelligent and unbiased search for the best way to use technology.

To help rectify this situation, engineers must join the decision makers.

But first they must learn the ABC's of achieving power and unlearn the patterns of thought that keep them from transcending their training.

ALASKA JOURNAL OF COMMERCE AND PACIFIC RIM REPORTER WEEK OF FEBRUARY 23, 1981

In the Air Force, we must see a broadened infusion of our Engineering and Services professionals into the general leadership. This is not new. Our professional military schools for years concentrated on developing an officer corps founded in engineering principles, applied to the unique requirements of the armed forces. What is new is the individual burden to each individual in our career fields.

We need for the future a proper number of highly specialized personnel to continue functioning as internal consultants and engineers. We also need those who have the managerial credentials necessary to illustrate their capacities to get the most out of the resources available. This means acquiring the educational stepping stones to management.

For most of our people, this reflects a change in traditionalist thinking. For instance, once an engineer, the thought and motive train has been to become a super engineer. I am suggesting that as we mature as leaders, we must be able to better relate to the leadership first, and become a part of that leadership as we demonstrate that an engineering approach to management benefits the Air Force.

For most of our professionals, there is already the challenge of properly allocating time to the required professional military education, while at the same time considering the secondary education requirements needed to establish management credentials. For some, there is the opportunity to extend oneself and acquire a management master's degree while in residence at the Air War College, the Air Command and Staff School, or while at other Department of Defense-sponsored intermediate or senior schools. For others, there is the opportunity to take advantage of one of the excellent in-residence programs offered by the Air Force Institute of Technology, either at Wright-Patterson AFB or in a civilian institution. For many, the best available opportunity is the continued use of base-level education assistance or the G.I. Bill to pursue an added degree in off-duty or near-duty time. Whatever the alternative available, let me urge you to take full advantage of what is there.

Particularly among our engineers, the sense of professional identity tends to persist. We cannot foreclose being an engineering purist. For many, there is the advanced degree in industrial engineering. We have long felt that the industrial engineer, properly used, and carefully assigned, constitutes an extremely valuable resource, subsuming the best of engineering and management. Under the dictum "once an engineer, always an engineer," the graduate-level IE community has much to contribute to the Air Force of today and tomorrow. Among our disciplines, the systems engineer, community planner, the architect, and architectural engineer equally can refine and expand their capabilities as professionals, particularly since a management role is inherent in each, integrating the multidisciplinary efforts of others.

The challenge is to achieve positions of leadership, perhaps outside the traditional roles assigned to our officers and key civilians. This means that a substantial number of our people should begin now to consider a management pathway for their careers, adjusted to accept increasing and broadening responsibilities.

Achieving this management benefit offers a near-term yield to each individual career, and corporately to the Air Force. You see, engineers are faced with increasing sophistication of management systems which we employ as we move upward in the system. The language of manage-

ment has been modified through the introduction of new concepts, approaches and management tools. Computer technology and information systems have greatly influenced the decision process to which we contribute as engineers. When we advance more into management, we are more deeply involved in the decision process, and we must have the capacity to readily utilize and be involved in these systems.

We face increased application of both statutory and agency law, and complex Air Force and Department of Defense regulations, requiring consideration of environmental issues, occupational safety and health and energy constraints. Each of these is a highly specialized area. Management must comprehend the language of the specialists, and be able to ask the right questions, if we are going to make the right decisions.

This is amid constantly changing social processes, in which the cost of government and its share of the national productivity are and will continue to be concerns, and stimulate changes in the way we accomplish our mission. These changes require careful analysis, appreciation and understanding. Moreso, they require translation into the engineering decision process.

Internally, we are faced with concerns in which the military engineers were only passively involved in decades past. Our abilities to manage human resources must be qualified with a comprehension of labor law, manpower, personnel management, education, training, budgetary process, and equal employment opportunity. We are dealing today with federal contract law, complex contract performance management, establishing standards and criteria which can stand the test of time and court. Our engineering managers must work with military and civilian resources — each covered by greatly dissimilar bodies of law and compensation.

Amid all of this, none of our engineering managers can afford the luxury of concentrating first on one issue, then the next, sequentially, until orderly solutions have been achieved. As each problem surfaces, each challenge arises, the solution to each is frequently demanded, urgently needed, or already past due. How, in the name of reason, can the system continue to demand officers who can create order out of chaos and confusion; achieve engineering solutions amidst countless distractions; and expect no less than excellence against an option of accountability in full? Ladies and gentlemen — it **is** the system.

My contention is that if you can truly manage, you are going to make it. If you can master the jargon, the sub-languages, the procedures and processes of management sufficiently to get the job done well, you are going to be able to inject your engineering background into the decision process. If you can't manage, you're not going to have much of a vote or an influence "after the drawings have been signed."

And, that's going to take preparation. You're going to have to consider the straightest line between you and your ultimate goal, and along the way achieve the capacity to manage and lead. You're going to be faced with developing a program, evaluation and review technique network leading into that pathway which gives to you the qualitative enrichment you need in your background to clearly demonstrate that you are a good management candidate.

". . . an increasingly complex world of manpower, money, law and national purpose"

Among our professionals, engineers are forecast to be in short supply. Will this proposal detract from our engineering capabilities at a time when we have shortages on the horizon for the coming decade? No. At the beginning it is broadening the capacities of a vital human resource, and increases the yield from our force. Ultimately among our seasoned engineer/managers, it is an infusion of engineering capability into a new realm to meet high priority needs. It is expansion into the next plateau of placement of our professional resources. No one has proposed that pilots should remain in the cockpit for a career, even though we have been faced with pilot shortfalls. In fact, Air Force leadership has benefitted over the years from a career broadening and enrichment which expands the abilities of a line officer to function, until the resources managed go far beyond the charter of a career purist. There must be the proper mix of staff assignments, varying levels of responsibilities and the purposeful educational qualification of Air Force managers, capable of carrying out their responsibilities in an increasingly complex world of manpower, money, law and national purpose.

Each of our people deserves an equal opportunity to achieve positions of leadership. As each is selected, we all will benefit. We benefit most when we can provide an engineering approach toward meeting the needs of today and tomorrow. It is this engineering approach, in areas ranging from the contingency arena to the leading edge of technology, that will provide our national leadership with the guidance and direction, the consultative and qualitative assessments, and quantitative thrust to meet the needs of the Air Force as an instrument of national policy.

The catalyst to bringing a greater voice to engineering is in the person who accepts the challenge, and who constantly prepares for the challenge. That preparation, conditioning and direction is a process involving personal initiative, the needs of the service, and seizing the opportunity when it is there. E&S

Graduate engineering management

Education on the move

By Lt Col David R. Lee

Engineering management educational programs are literally "sweeping" the United States. This article gives some of the rationale for that growth and also describes the new Graduate Engineering Management (GEM) program offered by the School of Systems and Logistics at the Air Force Institute of Technology.

Even though engineering management is still an emerging field, the data in Figure 1 certainly reflects a phenomenal growth in engineering management educational programs. From the 16 advanced or graduate level programs in 1970, there were at least 70 educational institutions which offered an engineering management program by 1979.[1] More recent estimates now put the number at between 80-90 institutions.[2] An obvious question then becomes why has there been such a growth in engineering management education?

While engineering management is a new program at AFIT, the need for an engineer to possess management skills has been apparent for many years. As far back as the 1950's, the Institute of Electrical and Electronics Engineers (IEEE) organized an engineering management section.[3] The American Society for Engineering Education (ASEE) developed a similar division in 1973, and other professional societies such as American Society of Mechanical Engineers and American Society of Civil Engineers have done likewise. Continuing widespread interest in engineering management provided for the establishment of the American Society for Engineering Management in 1979.

The realization is becoming more apparent that engineers spend a large amount of their time in management functions. Data from engineer surveys in 1969 indicated that more than 80 per cent of the engineers surveyed were regularly assigned management duties.[3] Carrying this a step further, the Engineer's Joint Council data reflects that two-thirds of all engineers are likely to spend the last two-thirds of their careers as managers.[4] Additionally, many engineering specialities call for more than just pure engineering design, for example, production engineering and quality assurance engineering. It isn't always sufficient to merely develop the best technical solution to a problem. In practice a solution needs to be developed which is capable of being implemented in light of the broader societal and organizational factors. The engineering management educational programs are directed towards this larger perspective.

Technological and scientific developments are generating exciting advances in engineering. The improvements in computer technology, for instance, provide previously unthought of capability to evaluate alternatives, simulate different engineering designs, and even assist in the design process. New chemicals are also providing opportunities for innovative development of many new pro-

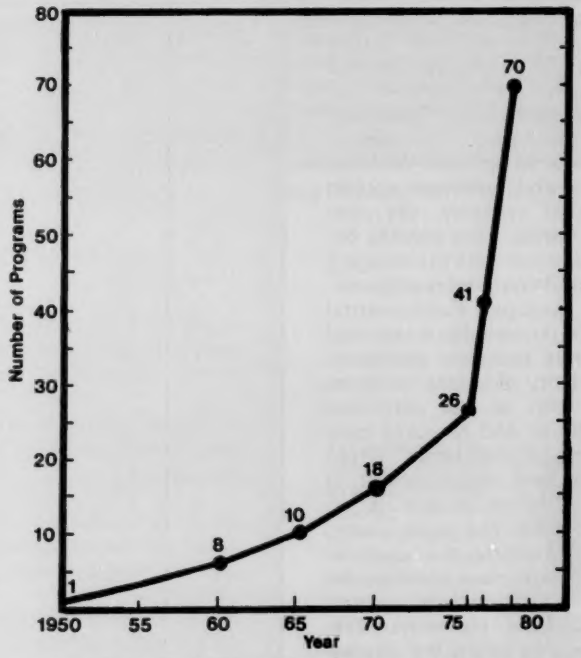


Figure 1. Growth of graduate engineering management programs.

SOURCE: Kocaoglu, D.F., "Master's Degree Programs in Engineering Management," Engineering Education, Vol. 70, No. 4, January 1980, pp 350-351.

ducts. Likewise, the advances in the precision and power of new sophisticated equipment are continually changing our approach to engineering and construction. Thus, there is a natural tendency for a person, whose engineering interests have been stimulated either by education or experience, to want to go further and develop a deeper engineering knowledge. For the Air Force and for society, we certainly need a sufficient number of people to pursue advanced technical and scientific education. However, there is another side to consider which has been alluded to earlier.

While there are some technical projects which can be addressed adequately by the single engineer, the scope and complexity of many engineering projects far exceed the knowledge and capability of the single engineer or scientist. Even Thomas Edison with all his marvelous genius and energies employed a staff of assistants to develop many of his inventions.

As these teams are formed and further combined into larger groups, a myriad of organizational management, group behavior, integration, motivation, planning, resource allocation, and control issues begin to surface. With experiences and perhaps certain elements of seniority, the new engineer moves from actually doing the technical work to managing the efforts of one or more engineer-oriented groups. Fundamental engineering knowledge is essential for the pure technical decisions, but the clarity of choice becomes clouded with all the peripheral organizational and resource considerations. Optimization based upon the best measurement of several objective criteria is no longer possible. The group leader, or more explicitly the engineer manager, must now consider the many subjective and unmeasureable elements. Frequently we've heard the expression "it was a political decision." This expression can be articulated in a different way. What really happened is that the decision-maker, operating under risk or uncertainty of outcomes involving multi-dimensional criteria, evaluated the alternatives and selected the one which seemed to provide the most satisfying final result. Does this sound too academic? Well maybe it does, but it sets the stage for appreciating the GEM program objectives and why the Air Force chose to develop an engineering management graduate program leading to a master of science degree.

The Graduate Engineering Management program is actually an outgrowth of the AFIT Facilities Management program which was terminated in 1980, after having graduated 150 students during its seven-year existence. At the present time, the GEM program continues to serve the civil engineering (55xx) career field; however, it is anticipated that it will expand with the June 1982 class entry and include engineers from other career fields.

This is oriented towards management, but has a different perspective than the normal MBA program. The GEM program is considered to be part of the total education development of the engineer, by providing the enhanced ability to effectively analyze, design and manage complex engineering, scientific and technical defense systems. Figure 2 lists the specific educational objectives which support this overall program objective.

The curriculum for the GEM program includes core courses and electives. The core courses include the fundamental quantitative and qualitative cores common for all students enrolled in the program. Elective courses enable students to round out their educational experience with courses relevant to their curriculum and which are of particular interest to them as individuals. Depending upon a student's experience and capabilities, there are opportunities to transfer certain graduate credits earned at other institutions and also to take more advanced courses. Each student is also required to complete a

•Develop the ability to demonstrate the logic, objectivity, and soundness of their decision-making processes in complex, dynamic, unstructured, and uncertain situations.

•Analyze complex problems, assess alternatives, and develop and apply appropriate decisions criteria.

•Communicate effectively, both orally and in writing.

•Deal successfully with human, material, financial and information resources.

•Increase knowledge of management information systems and the capabilities and limitations of the computer as a tool for managerial decision making.

•Increase understanding of the legal, economic, political, and societal environments which impact upon the decision-making process.

•Provide the ability to conceptualize a variety of complex phenomena as systems and with the knowledge necessary to rigorously analyze these systems.

•Increase understanding of how their jobs relate to the various functional activities in the life-cycle management of specific defense systems.

Figure 2. Educational Objectives of the Graduate Engineering Management Program

research study and prepare a thesis. A principal purpose of the thesis is to demonstrate the student's ability to integrate concepts and techniques acquired through course work by applying this knowledge to an investigation of a problem of interest to Air Force engineering managers.

The GEM program is conducted in five academic quarters and two short terms (total of 15 months). The first short term is primarily a review session covering fundamental mathematical, accounting and computer science topics. The normal academic load consists of 4 courses per quarter totaling 12 credit hours.

Admission into the Graduate Engineering Management program is open to Air Force officers in the rank of lieutenant through lieutenant colonel, civilians in comparable civil service grades, equivalent grade officers of other United States services, and qualified foreign military officers. Information on application procedures for USAF officers is contained in AFM 50-5 (Chapter 5, Section A-AFIT). Air Force civilians (GS-11 or above) should refer to AFR 40-411 and AFR 40-418. As part of the selection process, the applicant must satisfy the academic admission requirements.

Through continuing advances in curriculum content, the AFIT Graduate Engineering Management Program has become a special educational opportunity which provides military and civilian engineering managers with the knowledge and analytical skills necessary to perform effectively in a variety of middle and upper level assignments in their career field. Engineering management educational programs are on the rise nationwise, and the AFIT GEM program certainly stands among the leaders in quality education.

E&S

REVIEW TERM
Introduction to Computers
Introduction to Accounting
Quantitative Methods Review

QUARTER I (Summer)
Managerial Economics
Concepts of Research
Statistics for Managers I
Organizational Management and Behavior
QUARTER II (Fall)
Communication for Managers
Statistics for Managers II
Quantitative Decision Making
Elective QUARTER III (Winter)
Contracting for Engineers
Production Management
Independent Thesis Study
Elective QUARTER IV (Spring)
Federal Financial Management
Engineering Information Systems
Independent Thesis Study
Elective SHORT TERM
Independent Thesis Study QUARTER V (Summer)
Engineering Management Applications
Independent Thesis Study
Elective NOTE: At least two electives must come from the following course group: Analysis of Environmental Issues, Analysis of Energy Issues, and Federal and Labor Industrial Relations

Figure 3. Graduate Engineering Management Curriculum.

[1]*Kocaoglu, D.F., "Master's Degree Programs in Engineering Management," Engineering Education, Vol. 70, No. 4, January 1980, pp 350-352.*

[2]*Kocaoglu, D.F., "Graduate Education in Engineering Management," paper presented at National Conference for Deans, St Louis, Mo., December 1-3, 1980.*

[3]*Williamson, M.A., "Engineering Management," (to be published) Encyclopedia of Management, 3rd edition, Reinhold Publishing Company.*

[4]*Babcock, D.L., "Engineering Management: Origins and Growth," Engineering Education, Vol. 70, No. 4, January 1980, p. 349.*

Lt Col David R. Lee, *Associate Professor of Engineering Management, is the Program Manager for the Graduate Engineering Management Program, School of Systems and Logistics, AFIT, Wright-Patterson AFB. He is a 1962 graduate of the U.S. Air Force Academy and has served in a variety of civil engineering positions. He earned a master's degree in industrial engeinering in 1966, and a doctorate in 1972, both from Purdue University. He is a registered professional engineer in Ohio.*

DOCTORAL PROGRAMS UPDATED

by Lt Col Phil V. Compton

The civil engineering doctoral-level education programs support our efforts in three primary areas.

First is the dramatic increase in support of the research and development (R&D) programs for which the career field has the responsiblity; for the R&D unique requirements directly associated with air base survivability, post attack launch and recovery; and energy autonomy for Air Force installations. These doctoral requirements are located primarily at the AF Engineering and Services Laboratory, AF Weapons Laboratory, and the Office of Scientific Research.

The second area consists of the education programs conducted by the AF Academy and AF Institute of Technology which have 55XX faculty positions requiring the doctoral degree to maintain national accreditation standards in both undergraduate and graduate programs.

A few doctoral requirements have been identified in the third area, that of high technology interface and technology transfer at major commands, separate operating agencies and joint service agencies. In time, requirements may be expanded to include product divisions within laboratories and with system program offices to insure new weapons systems compatibility with launch platforms and aid the interface.

A study of the career field's capacities to meet these requirements was presented at the School of Civil Engineering's annual program review and recommended an increase in the number of doctoral authorizations from 21 to 38. The largest proportion of the increased positions are in support of the career field's R&D programs.

The study also addressed the full spectrum of career management of these officers who have or will have a doctoral-level education. Officers will be selected to enter education programs to obtain the doctoral degree to fill a specific position. The officer and gaining organization will work closely in developing course work and research topics which can best prepare the officer for his assignment in that specific position. After completing the initial tour in the doctoral position, the officer can expect a variety of assignments in both doctoral and nondoctoral positions as he broadens his career.

The doctoral level of education is not a limitation to a career officer's progression, but an enhancement of the officer's ability to contribute to the Air Force and engineering in all aspects of the career field. Some officers, based on their specific technical speciality, career field, career performance, and individual career goals, may have several consecutive doctoral position assignments during their career. The requirements as developed do provide a well-defined structure of job opportunities in the grades 03 through 06, which the officer can use in plotting his career path. As a result, there will be an increase of educational opportunities for the career field over the next few years as the program is initiated to develop our officer resources holding the doctoral level of education.

Implementation of the long-range career plan will allow the career field to develop a strong technical base to adequately meet future challenges in R&D, maintain high quality education programs, and assist in the rapid transfer of new technology to the career field. The successful career progression of officers entering these programs will provide the career field a nucleus of highly educated, technically oriented individuals who can provide the leadership and management of our technical aspects as well as contribute to all aspects of Air Force civil engineering. E&S

Lt Col Phil V. Compton *(colonel selectee) is the new dean, School of Civil Engineering, Air Force Institute of Technology, Wright-Patterson AFB, Ohio. He first came to the school in June, 1979, as associate dean from headquarters of the Security Service, Kelly AFB, Texas, where he was director of engineering and construction. He earned his bachelor of science degree in civil engineering in 1961 at the University of New Mexico, his master of engineering degree from Texas A&M University in 1964, and his doctorate there in 1970. He also completed Industrial College of the Armed Forces.*

FY82 Professional Continuing Education Course Offerings

AFIT School of Civil Engineering

Wright-Patterson AFB, Ohio 45433

Several changes and initiatives were made to the School of Civil Engineering curriculum during the annual Program Review Committee, which met at the Air Force Institute of Technology at Wright- Patterson AFB, Ohio, on June 2-3. Major command deputy chiefs of staff for Engineering and Services thoroughly reviewed the school curriculum, adding one course, deleting one course, and making several changes in emphasis and content within existing courses.

A new course entitled, "Techniques of Estimating," will be offered starting in FY82. Attendance will be targeted to specific MAJCOM and Air Staff positions.

ENG 562, "Contemporary Energy Applications," has been dropped. Many of the state-of-the-art concepts introduced in this course have yet to be introduced within the Air Force. System retrofit and conservation of energy through maintenance will be covered in ENG 563, "Facility Energy Systems."

TECHNICAL APPLICATIONS COURSES

ENG 460, Mechanical Engineering for Supervisors (2 weeks): For engineer supervisors in EEP and operations branches.

ENG 470, Electrical Engineering for Supervisors (2 weeks): For engineer supervisors in EEP and operations branch.

ENG 472, Engineering for EMCS (2 weeks): For systems engineers in the operations branch.

ENG 480, Building Systems (3 weeks): For engineers/architects in EEP branch.

ENG 485, Contingency Engineering (2 weeks): For all CE officers with mobility or base recovery roles. Class 82D, 2 weeks, is designed primarily for Air National Guard/AF Reserve.

ENG 490, Architectural Planning (2 ½ weeks): For architects, architectural engineers and engineers performing architecture design.

ENG 500, Environmental/Sanitary Engineering (3 weeks): For civil and sanitary engineers.

ENG 550, Pavement Engineering (3 weeks): For pavement engineers.

ENG 561, HVAC (4 weeks): For design engineers.

ENG 563, Facility Energy Systems (3 weeks): For experienced mechanical engineers.

ENG 571, Electrical Engineering (4 weeks): For design engineers.

ENG 590, Corrosion Control (2 weeks); For corrosion engineers.

Techniques of Estimating (Course number and length to be announced): For CE personnel involved in costing and cost analyses.

MANAGEMENT APPLICATIONS COURSES

MGT 001, Base Civil Engineering (2 weeks): For the newly assigned officer and civilian.

MGT 002, Commanders Civil Engineering Orientation (1 week): For wing and base commanders and deputies.

MGT 004, Environmental Protection Committee Members (1 week): For EPC members.

MGT 400, Base Civil Engineering Staff officer (2 weeks): For BCEs and deputy BCEs. Class 82A is designed primarily for experienced BCEs; Class 82B for newly assigned BCEs.

MGT 403, Industrial Engineering Management Applications (2 weeks): For chiefs of industrial engineering branches.

MGT 406, Family Housing Management Application (2 weeks): For chiefs and personnel in family housing management.

MGT 415, Contract Preparation (2 weeks): For architects and design engineers in EEP.

MGT 416, Financial Management Applications (2 weeks): For CE funds managers.

MGT 420, Engineering and Environmental Planning Management Applications (2 weeks): For chiefs of EEP branches.

MGT 425, Contract Management (2 weeks): For architects, construction management, and design engineers in EEP.

MGT 427, Fire Protection Management Applications (2 weeks): For base fire chiefs and deputy fire chiefs.

MGT 430, Operations Management Applications (2 weeks): For chiefs and deputies of operations branches.

MGT 520, Environmental and Contract Planning (3 weeks): For base development planners.

The PRC... a partner in professionalism

Maj Gen Stuart H. Sherman, Jr.
Commandant, Air Force Institute of Technology

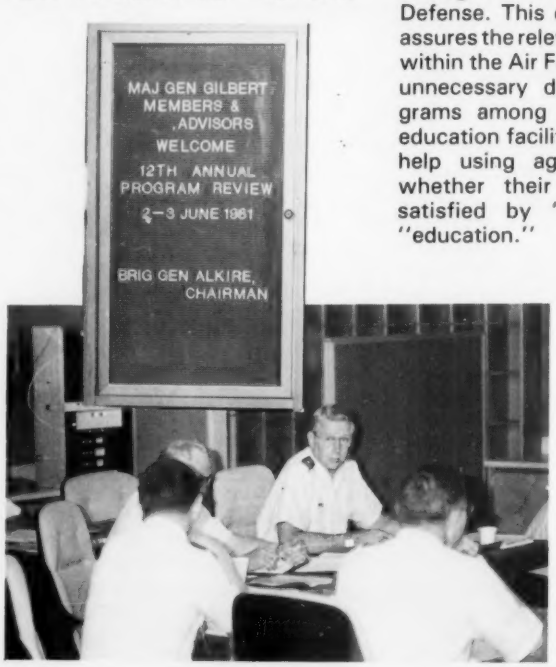
"The ability to listen to others, to understand, and to act upon what's being communicated is a very special talent." Both the civil engineering career field and the Air Force Institute of Technology owe the unknown sage who authored that piece of graffiti a vote of thanks. In essence, the fellow capsulized for us the key objective of the AFIT School of Civil Engineering Program Review Committee (PRC).

The history of the AFIT School of Civil Engineering PRC dates back to the early 1970s when Air Force leaders determined a need for more detailed analysis of civil engineering course offerings. In fact, I was one of the officers appointed to establish the group.

The PRC was given a charter far greater than its former function as part of a biennial justification and review process. Over the past decade the PRC has proven its worth and effectively addressed the corporate needs of Air Force civil engineering. The group has also made possible the essential commitments of resources to the school in terms of manpower and permission for students to be away from jobs at home bases.

In short, the PRC provides AFIT with essential customer feedback: what's right, what's wrong, and relative priorities of our civil engineering education programs. That feedback, in turn, helps determine the structure, content, and availability of institute civil engineering courses. And, that feedback comes to us directly from professional, functional managers out in the field. As a result, we provide you with the knowledge needed to accomplish your mission.

By way of background, the PRC has many similarities to curricula committees found in civilian institutions of higher education. Such committees review courses periodically to ensure their relevance and usefulness. They provide the school administration and faculty the opportunity to review student inputs, to state views concerning new offerings, or to advocate the elimination of courses. Such dialogue is essential to quality education. However, there are some important differences from our PRCs. They usually don't involve the participation of the organizations who ultimately have to benefit from the resultant educational programs. At AFIT we believe this "user feedback" is critical to our proper mission accomplishment.



AFIT is first and foremost a military organization. It's specific mission is providing Air Force professionals the educational breadth to accomplish their assigned duties — current and future — as they use such knowledge to accept greater responsibilities. We are a nationally accredited educational institute. Our PRC blends the concepts and practices of civilian academia with the pragmatic requirements of the military profession. This challenge, in turn, places unique requirements upon us.

Our academic programs, plans, and potential are routinely reviewed by people and agencies throughout the Department of Defense. This coordination effort assures the relevance of our efforts within the Air Force and precludes unnecessary duplication of programs among the various DOD education facilities. The talks also help using agencies to decide whether their needs are best satisfied by "training" or by "education."

Training is learning how to improve skills for a specific job. For illustration, you train a mechanic to fix specific avionics equipment on the F-15. However, education is the expanding of knowledge and professional ability allowing for understanding the scientific and engineering principles behind such equipment, i.e., more to the civil engineering point, better pavements, workable energy control systems, etc.

Another key point concerning AFIT is the purpose of the education we provide students. All institute programs are mission oriented. Our resident schools provide knowledge needed to satisfy "real world" Air Force requirements — literally "what you need is what you get" to paraphrase a popular slogan.

The School of Civil Engineering PRC is one of the ways we keep abreast — and ahead — of your requirements. The PRC provides periodic, intense review of our courses and program offerings. Similar review processes occur in AFIT's other resident schools. Both the School of Engineering and the School of Systems and Logistics solicit insight and guidance from key Air Staff and major command agencies.

However, the Civil Engineering PRC is one of the most involved of our program review groups. It is convened, and the members selected, by the Air Force Director of Engineering and Services. They include the deputy chiefs of staff for engineering and services from all major commands. During the three-day review, the members address the content, quality, and primary thrust of each AFIT civil engineering course. The group proposes course deletions and additions and addresses how best to meet requirements of the major commands and special operating agencies of the Air Force. At the same time, the PRC elicits major command, separate operating agency, and Air Staff support needed to ensure that AFIT civil engineering classes receive the number of students necessary to meet requirements. The PRC also brings together Air Force leaders and AFIT faculty members in a dynamic environment. This interaction results in meaningful dialogue and has made possible the value and responsiveness of the school for many years. In addition it has produced consensus on the changes needed to match available resources to the needs of the Air Force as perceived by the functional manager.

Our civil engineering faculty members provide a major factor in the PRC evaluation process. Each department head consolidates the recommendations of his colleagues and advocates them to the PRC. All interested faculty members are encouraged to attend the committee meetings and participate in discussions with PRC members. Accordingly, direct dialogue takes place between our faculty leaders and the Air Force's civil engineering leadership.

In a sense, because of the mutual issues discussed, AFIT civil engineering PRC meetings are small-scale worldwide Engineering and Services conferences. There is a melding of academic and engineering thought. Both educators and PRC members gain a keener insight and deeper perspective as to the interrelationship and interdependence that exists within our civil engineering community.

The last PRC, which met this past June, was chaired by Brig Gen Gary Alkire, AFLC's DCS/Engineering and Services. The group discussed a broad spectrum of topics:

- Course review of the 25 courses offered by the school
- The state of the civil engineering school
- Educational needs of the USAF civil engineering community
- The new civilian career management program
- Graduate programs, outreach programs, and civilian institution programs
- Incentives for engineers and scientists
- Effects of TOPCAP on mid-level management of the civil engineering career field in the CONUS
- Utilization of industrial engineers in civil engineering

As you can see, there was a lot of ground covered! And, as one of the participants, I can vouch that the meeting was enlightening and mutually beneficial to all who attended.

I came away from the meeting renewed in my conviction that the PRC is of great importance. As the AFIT Commandant, I saw the vital and dynamic role the Program Review Committee plays in our school. As a former civil engineering officer, I clearly saw the group's valuable function relating the educational process to the real world. The PRC is an important mechanism helping AFIT and the civil engineering profession adapt to changing requirements and through that process to be ready and responsive to the challenges we face in our military duties. Let's continue to make that listening talent a two-way street. E&S

Maj. Gen. Stuart H. Sherman Jr., *is commandant of AFIT and the Defense Institute of Security Assistance Management, Wright-Patterson AFB, Ohio. A graduate of Georgia Military Academy, he graduated from the U.S. Naval Academy with a bachelor of science degree, the University of Michigan with master of sciences degrees in astronautical engineering and instrumentation engineering, the Armed Forces Staff College and the National War College. He has also served at MacDill AFB, Fla., Castle AFB and Vandenberg AFB, Calif., Minot AFB and Grand Forks AFB, N.D., Offutt AFB, Neb., and at the Pentagon. He has been a strategic missile wing and division commander, and in serveral key assignments with Strategic Air Command headquarters including deputy chief of staff for Engineering and Services. Among his Pentagon assignments, he has served in key research and development positions, as Director of Manpower and Organization and as commander of the Air Force Management Engineering Agency.*

Members of the Air Force have long been encouraged to attend classes

Master of Engineering Applications Degree

by Maj William E. Simpson

Continuing education is an essential ingredient in organizational success. Throughout civilian industry, management promotes active participation of professionals in both off-duty and on-duty education. In one case, the corporate jet was enlisted to take students to a distant campus for weekend courses.

Why? There must be tangible corporate rewards in business to warrant the expense of tuition assistance, encroachment of education into the work day, and focusing an employee's time and creative energy on self-improvement. The benefits are both obvious and obscure. Clearly, the technological fields in particular go through explosive periods of change, requiring an employee to take a periodic update or refresher. The student obviously engages in a beneficial exchange of ideas and concepts in the classroom. Less evident is the motivational thread, which ties the student's off-duty academic and professional enrichment to an education program which is visible to the corporate judges of performance. Also, industry seeks to overcome the negative value introduced by academic obsolescence — loss of learning, persistence of outdated procedures and ideas, and gradual abandonment of the professional standards and criteria inspired in school.

Members of the Air Force have long been encouraged to attend classes, with assistance provided in several forms. Most bases offer off-duty undergraduate and graduate programs to both military and civilians. Civil engineering officers may apply for a graduate degree through the Air Force Institute of Technology, in a fulltime resident program at the School of Systems and Logistics. Also, they can apply to attend a civilian graduate school through the civilian institution

Maj William E. Simpson *received his engineering degree from UCLA in 1966, and his master of science degree in Civil Engineering from Arizona State University under AFIT. Commissioned from AFROTC in 1966, his assignments include Wurtsmith AFB, Mich., Samsun Air Station, Turkey, Laughlin AFB, Tex., and the AFIT Civil Engineering School. He was the course director for the Base Civil Engineering Staff Officers course and the Operations Management Applications course until his assignment to Air Force Logistics Command Headquarters at Wright-Patterson AFB. He is a correspondence graduate of Squadron Officers School, and graduated from the Air War College seminar program.*

programs.

Both civil engineering officers and civilians are encouraged to maintain proficiency through continuing education courses given at the AFIT School of Civil Engineering (SOCE). There are 25 courses in management and technical subjects, with all but three offered for college credit. Many students return each year to take additional courses and soon accumulate a large number of credits. A new SOCE program now provides the opportunity to capitalize on these continuing education activities by offering a masters degree in Engineering Applications. The curriculum combines a structured program of normally required continuing education courses with off-duty accredited courses taken at the local level. This masters program promotes the development of the engineering corps and provides considerable incentive for professionals to stay current in their job capabilities.

The curriculum requires 48 quarter credit hours consisting of 36 core and 12 elective hours to be completed within a five-year period. The core program is comprised primarily of continuing education classes offered at the SOCE; however, six credit hours of related graduate-level engineering courses may be transferred from a civilian institution. A thesis is also included in the core for six credit hours on a subject of interest to the civil engineering career field. The thesis topic is approved and guidance is provided by a thesis advisor to the student. The core program consists then of a minimum of 24 hours in residence which amounts to approximately three courses per year. The student must fulfill the normal course prerequisites based on experience and job duties. Students will not qualify for a course solely because they are enrolled in the MEA program.

Through the student's program manager, an education plan is developed which integrates the in-residence education to the 12 hours of elective courses. Electives may be taken at the SOCE or an accredited, graduate-level institution at the local level. Courses may be taken in applied physical sciences, behavioral decisions, communications in the organizational setting, federal labor relations, human resources development, human resources management, logistics systems policy, managerial career development, organizational psychology and technical writing. The education plan listing the time frame for all core and elective courses is approved upon admission to the program. The five-year time period begins on the first day of the earliest course applied even though that course may have been taken prior to program enrollment.

Eligibility requirements include the applicant being a member of the civil engineering career field with a bachelor's degree in engineering, architecture or the physical sciences. Applicants must take the graduate management admission test. Applications are by letter to the SOCE indorsed by the base civil engineer and the major command or separate operating agency deputy chief of staff, Engineering and Services. In addition to name, grade and social security number, the applicant should list the organization to which they are assigned, the base, major command or separate operating agency, and the AUTOVON telephone number. The applicant's current job should be given with a brief description of duties. Past positions held should be discussed with length of time in each position. Applicants should outline their near and long-term career plans. Very important are the names of the universities through which courses approved for transfer may be taken, including a statement on how the applicant will take the courses. Applications are reviewed by the AFIT registrar and a faculty board for eligibility. Eligible applicants are then asked to submit an education plan outlining the courses to be taken. Approval of the education plan results in formal enrollment in the program.

What does the applicant gain? First, this program is an extension of the courses normally taken by our SOCE students as they progress to higher professional requirements in the career field. The hours taken through local civilian institutions equal a nominal load taken in off-duty time during the remainder of the year. Secondly, the student's education records are updated incrementally with each successfully completed phase, clearly showing progress and professionalism.

Ultimately, the award of the master's degree in Engineering Applications signifies more than earning a degree per se. It means also that this graduate has had carefully structured graduate education related to successful job accomplishment in the engineering career field.

Prospective applicants can write for information to the School of Civil Engineering, (AFIT/DET) or call Capt Bill Cox, AUTOVON 785-4552, or write to me. E&S

'WHITE DUST CLOUDS'

services emerges from the chalk dust age at Lowry...

by
Capt Larry Garber

In the past it was not uncommon to see an instructor teaching a services course covered entirely with chalk dust. We have all encountered this white creature stalking through the basement of building 758 on Lowry AFB, Colo., along with other similar looking creatures who were teaching — or should I say — creating huge white dust clouds in the classrooms.

Just as the Dark Ages are past history, so goes the chalk dust age. We have evolved into a new era. The big difference is that now instead of

chalk dust, we see flour dust, soot dust and instructors teaching the billeting, mortuary, and commissary courses emerging from the doldrums of Building 758 and creating a dust storm throughout the Denver and surrounding areas with their students.

What am I talking about? The Services Training Branch at Lowry AFB is truly beginning a new era. Services training in the past was a classroom presentation. Now, under the leadership of Maj Al Ochsenbein, services is taking the classroom to the training. The educational emphasis has emerged in the direction of emphasizing the practical.

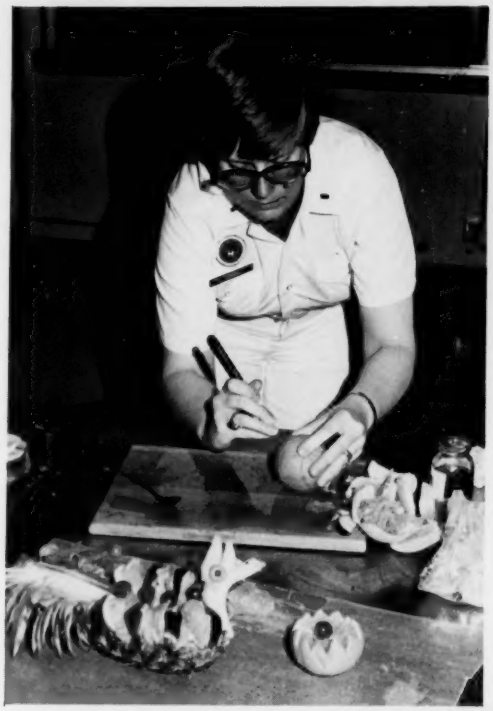
Each year more than 1,200 students enter this new era of training ranging in rank from colonels in the services staff officers course to airman basics in the basic food service course. additionally, a large number of our key civilian managers and even a few members from other services are trained, taking away our secret recipe for preparing services personnel for their new jobs.

Whoops! I gave you the ingredients of our secret recipe but I omitted the most important step—the directions on how to prepare the students.

Remember, I said we now have instructors covered in flour dust, well, we do! And in addition, we now have soot dust too. In the basic food course, the food service instructors have taken training to the central pastry kitchen. For five six-hour days, students learn the techniques of donut making, cookie making, bread, pastries and pie making from flour covered instructors. At the present time, four of these flour-dusted personnel are assigned to train 18 students in the pastry kitchen. Students are also trained in the central preparation kitchen for 16 hours. They work in the kitchens of various dining facilities throughout Lowry for a four-week period. This training includes the operations of the newest cash registers used in "a la carte" operations.

I mentioned soot. Did anyone guess what I was referring to? You're wrong! Soot-covered instructors are the instructors in the basic food course who teach the operation and maintenance of the field range cooking units. The students spend 16 hours with these units and I will venture to say that those students going overseas will see them again. Prime RIBS familiarization training is an essential element of all Lowry services courses.

Before the basic cooking students begin their field training, they also receive in-class hands-on training in the art of pastry decorating and garnishing methods. With Lowry dining facilities soon converting to the new "a la carte" system of food preparation, the importance of students having the knowledge to properly garnish and decorate becomes very important. Portion control, food management and pricing are key to the success of "a la carte." These are well emphasized in the management aspects of our seven-level



1LT Patricia Varner, services instructor, prepares a "bird of paradise" for the food service officers class.

1LT Patricia Varner teaches 2Lt Carla Williams the techniques of garnishing.

TSgt Giacometti, food service instructor, explains the operation of the M-67 Immersion Heater.

and officers courses.

The use of field trips in all the courses is becoming an important tool to further the learning process. The food services supervisors course conducts a field trip to local culinary institutes. In addition, they may visit a local restaurant and observe the techniques employed by those civilian businesses.

The billeting managers course also uses field trips for course enhancement. Arrangements have been made with local hotels to have them conduct complete tours throughout their facilities. The mortuary officer's course also has field trips to local funeral homes. These field trips are considered an important tool in developing technical knowledge among the students. In addition the mortuary officers course moves the classroom to an open field where an exercise simulating search and recovery procedures is practiced.

The commissary management course takes two field trips during the three week course. The first is to a wholesale produce market located in Denver. The second field trip includes a tour to Colorado Springs where they visit the commissaries at Peterson AFB and the Air Force Academy.

The commissary management course also uses another unique training device to increase student knowledge. A major wholesale grocery supplier sends two representatives to the classroom where they conduct an educational can-cutting demonstration. Four to five major brands are compared to each other for quality, taste and appearance. They compare everything from peas and carrots to salmon and vienna sausages. The demonstration takes two hours to complete and it provides the students with an in-depth knowledge of the canned products they sell in their stores.

In addition to the field trips, can cuttings, and hands-on training, another very important training aid is the use of guest speakers throughout the services courses. The guest speakers come from on-base organizations such as the Air Force Accounting and Finance Center, and also the Air Force Institute of Technology at Wright-Patterson AFB. Visits by Palace Blueprint personnel from the Military Personnel Center at Randolph AFB, Tex., enhance career motivation and outline the latest developments in the services career field. Briefers from major commands give an insight into the latest trends and management hints from a MAJCOM perspective.

Overseas commands have been able to benefit from services training by requesting mobile training teams. The first of these was conducted at Ramstein AB in 1980 and mini-workshops were held in PACAF and Alaskan Air Command. Mobile training saves scarce training dollars and results in training in a specific area when otherwise quotas might not be obtained.

Services training is indeed moving into a new era. The instructors are employing many training techniques to improve their courses and make each course interesting and informative.

The chalk dust clouds are a thing of the past and the future looks very bright for the services training program at Lowry. Hope to see you in one of our courses soon. E&S

Capt Larry Garber *is a group services instructor at Lowry AFB, Colo. He has a bachelor of science degree in industrial management from the University of Missouri, Columbia, Mo. He is currently completing his thesis for a master's degree in hotel and restaurant management from Florida International University, Miami, Fla.*

worth noting

AFMPC CAREER NOTES: PERMISSIVE REASSIGNMENT

In December of 1980, the Air Force expanded permissive assignments. The program is available to people assigned in the CONUS and allows the individual to request assignment to another CONUS location of their choosing.

The member could depart his current base after just one year on station. The primary consideration is manning at your current station and your requested one(s). (Complete eligibility criteria is contained in AFR 39-11, para 3-16 and is maintained at your CBPO.)

A permissive move means at no cost to the Air Force. You must pay all costs associated with this move. Relocation of your household goods and transportation costs for you and your dependents must be borne by you, and any time spent in transit will be charged as ordinary leave.

If you desire more information about this program, please contact your local CBPO.

TURKEY BASE OF PREFERENCE (T-BOP)

Air Force has initiated a new assignment policy, T-BOP, for all people selected for an assignment to Turkey. This new program is in addition to the current home basing and follow-on programs.

Approximately 10 months prior to rotating from Turkey, you may indicate up to five preferences for your next assignment. These preferences may be overseas or in the CONUS. AFMPC will approve your request if a vacancy exists coinciding with your estimated date of return from overseas, or up to six months after your return from overseas. This is a departure from normal assignment policy where requirements drive assignments.

Chances of receiving an assignment of your choice are greatly enchanced when approval is based on vacancies and not requirements. You may obtain additional information on T-BOPs from your local CBPO.

SENIOR NCO OVERSEAS RETURN SELECTION

When there is more than one senior NCO in the same grade and AFSC returning from overseas during the same returnee cycle, we advise each by message of all the available requirements for which they will be considered.

The requirements are established by determining the major command or separate operating agency with the lowest manning for your particular grade and AFSC. They, in turn, identify their base(s) with the greatest need.

Each NCO is asked to align these requirements according to his preference. When an NCO doesn't include all the bases offered he could be hurting himself. It is important for senior NCOs to list each and every one of the bases with requirements if they care about the base to which they will be matched.

E-9 assignments are handled differently. The chiefs group identifies all vacancies. Working with the MAJCOMs/SOAs, the vacancies are given priorities without breaking ties between vacancies. This procedure usually permits identification of more requirements than returnees, thereby giving chiefs increased assignment options.

We cannot yet utilize this procedure for MSgts and SMSgts because of much larger numbers. (The chiefs group has six resource managers to manage a total resource of approximately 4,600 chiefs. The average resource manager in MPCRA manages a resource of greater than 10,000 people in a variety of grades and skills.)

— (SMSgt S. W. Robinson, Civil Engineering Functional Representative, AFMPC/MPCRAI, AUTOVON 487-5205/4008.)

AFESMET EXPLAINS AFMS PUBLICATIONS BULLETINS PROCESS

We have received several inquiries concerning how to obtain Air Force Manpower Standards (AFMS). Here's a capsule version of how an AFMS is distributed and how to obtain a copy.

All AFMSs are distributed under a standardized process known as functional "F" distribution. "F" distribution is a computerized requisition and distribution network that relies on third class mail and is designed for normal Air Force publications going to customers at Air

Cont'd next page

Force bases.

As with other Air Force publications, AFMSs must be identified on a unit-by-unit, base-by-base basis. There is no standardized requirement for base, major command or any other organization to be on automatic distribution for AFMSs.

Each new AFMS is announced in Part I, Section A, of the Air Force Publishing Bulletin (PB). Offices that need a particular AFMS should establish a requirement with the base publication distribution office (PDO) at the time of announcement in the PB.

It is important that you do not wait until the AFMS is printed and distributed before submitting a requisition. If distribution requirements are not identified early, adequate distribution will not be made, and the published quantity may be insufficient to support established requirements.

A couple of things to remember—pay close attention to the PB, and identify your requirements now. Establish your requirements for AFMS 44XX, Civil Engineering, and 46XX, Services, by submitting AF Form 764a to your servicing PDO.

Remember, the key to getting your AFMS is to get on the initial distribution. But if early identification of need was not made, backorder the publication through your servicing PDO.

HARVEST BARE TRAINING

Prime BEEF/RIBS personnel will be receiving more training on the HARVEST BARE shelter system in the near future.

This increased emphasis is due to the fact that large amounts of these hardwall shelters are being procured to support potential Rapid Deployment Joint Task Force (RDJTF) operations in the harsh environment of Southwest Asia.

Prime BEEF/RIBS forces with RDJTF OPlan taskings will undergo intensive HARVEST BARE training from the 4449 Mobility Support Squadron, Holloman AFB, N.M.

Initally, training will be given to a cadre of personnel for each RDJTF beddown location. Quotas for this training will be managed by AFESC through each major air command.

For other Prime BEEF/RIBS forces, the Eglin Prime BEEF/RIBS training site has begun familiarization training on a limited number of HARVEST BARE assets (kitchen, shower, latrine and general purpose shelter) which are on loan from the 4449 MOBSS. Lesson plans consist of briefings on erection, operation and maintenance techniques using the asset as a static display.

The new training program will provide 7,700 engineering and services personnel (Prime BEEF, RED HORSE, and Prime RIBS) who come through the site each year to gain basic familiarity with HARVEST BARE.
(Major Tull, AFESC/DEOT, AV 970-6130)

MULTI-DISCIPLINARY PLANNING ASSISTANCE TEAMS (MPATs)

In June of 1981, the Air Force Regional Civil Engineer, Western Region (AFRCE/WR), at the request of Strategic Air Command, hosted an organizational meeting to develop the MPAT concept for March AFB, Calif.

Patterned after the American Institute of Architects (AIA) Regional/Urban Design Assistance Teams, planning teams can be assembled to apply the concept to Air Force installations.

The MPAT charter, composition, work products, funding requirements, and organizational roles were developed at the June meeting. Land-use, transportation, facility use, and overall base design will be the areas of study and analysis for the MPAT.

Any Air Force base can request MPAT assistance with a written inquiry, through the MAJCOM, to the appropriate AFRCE.

The objectives of the MPAT program are:

(1) to give Air Force support to installations in their efforts to take the initiative and become a more effective influence in air base planning and design issues,

(2) to improve the quality of design throughout the Air Force by involving a multi-disciplinary team of professionals in the process, and

(3) to identify opportunities and initiatives that can be taken by the base in future development.

(Capt Kellogg, AFRCE/WR, AV 561-4303)

Second Lt Joseph L. Smith, *(right) a cadet first class at gradiation, received the Kamenicky Award for being the outstanding cadet in civil engineering at the Air Force Academy for the class of 1981. Brig Gen Clifton D. Wright, assistant director of Air Force Engineering and Services, presented the award.*

CONTINUING EDUCATION FOR 55XX OFFICERS

By Maj Grant Johns, AFESC/DEMG

The Air Force Institute of Technology (AFIT) has announced a new program that could provide the opportunity for 55XX officers, as well as other scientists and engineers, to remain current in their specific discipline through attendance at short (three-to-seven day) continuing education programs within civilian institutions or agencies of their choice.

This new program came about as a result of a conference chaired by the deputy chief of staff for Manpower and Personnel to discuss the problems of research and development manning. A program was then developed to fully fund continuing education programs for professional scientists and engineers to begin in FY82.

The prerequisites for attendance are:

- Military.
- Working in AFSCs 26XX-29XX, 3055, or 55XX.
- Assigned to duties relating to selected course of study or projected for such an assignment.
- One year retainability
- Limited to one course per fiscal year.

In order to apply for this program, applicants must first select the course from the institution or professional organization and then obtain a reservation or acceptance to the course. Next, the applicant fills out an AF Form 450, AFIT Sponsored Scientist/Engineer Continuing Education Course Application, and submits it through their squadron commander to Palace Blueprint for approval/disapproval. Approved applications are forwarded to AFIT for final processing, while disapproved applications are returned to the applicant. AFIT issues each approved applicant an authority letter for publication of orders at their base CBPO. Applicants assigned to the CONUS cannot attend courses outside the CONUS. However, applicants assigned overseas have the option of attending courses offered within their immediate major command theater or in the CONUS.

There are two methods for paying for a course. If an advanced payment is required in order to be accepted to a course, applicants must pay the tuition out of their own pocket and request reimbursement. For this method AFIT must receive the application for final processing a minimum of 45 days prior to the date when the course starts. Also, Palace Blueprint should be contacted for verbal approval prior to paying the tuition. The second method allows AFIT to contract for a course at an applicant's request, provided advanced tutition is not required. This method requires that the sponsoring institution accept payment at the completion of the course. AFIT must receive the application 60 days prior to the date on which the class starts.

Like all programs in the Air Force, this one is limited because of dollars. The amount allotted for the 55XX area equates to about 180 quotas for the year.

For additional information, contact your base CBPO or Palace Blueprint at AV 487-3451.

DIMITROFF AWARD ANNOUNCED

First award of the George Dimitroff journalism scholarship was to John Akins, a student at Gulf Coast Community College, Panama City, Fla.

Named for the late editor of the **Air Force Engeineering and Services Quarterly**, the award was presented by the American Hellenistic Educational and Progressive Association. Maj. Chris Christodoulou, president of the local association in Panama City presented the award.

Dimitroff edited the **Quarterly** for 12 years. He was killed in Atlanta Oct. 11, 1980.

VARIETY, THE SPICE OF LIFE

Since the bakers' Air Force Specialty Code (AFSC) was deleted in 1978, numerous skeptics have felt that good baked goods couldn't be produced by cooks. One person who has disproved that assumption is Mr. A.L. Maddox, food service officer at Mountain Home AFB, Idaho.

Maddox made contacts with local bakeries and set up a training program for his cooks as outlined in AFR 50-30, Commercial Food Service Training. Initially, Mr. Maddox worked with a small bakery called "The Merc," which specializes in prepared pastry. He then set up a training program with Albertson's supermarket chain, which prides itself on danish pastries and yeast raised products.

(Lt Col Roy G. Kennington, TAC/DEH)

an exercise in learning

RED LEARN 80

by Lt Col William E. Schaal
photos by A1C Kim Kuck

Live tear gas burns the air and gun fire cracks throughout the woods beyond the worksite's clear zone. Faces with large glassy eyes and blunted noses peer over the edges of yesterday's hastily built security fortifications. Such were the sights, sounds and even odor of RED LEARN 80, a local training exercise designed to practically demonstrate the classroom contingency skills training. For the 823 CES(HR), a RED HORSE squadron, the RED LEARN exercises are invaluable teaching and learning aids. RED HORSE is tasked to maintain a rapid deployable engineering force to support deploying flying forces and keep the airfields operational. We know enemy bombing and strafing attacks could end use of our runway to our aircraft for significant periods of time. This is unacceptable as our aircraft can not "fly and fight" sitting on the ground. RED LEARN 80 was developed to test RED HORSE' s ability to mobilize, deploy and perform war damage repair and force beddown under field conditions.

Throughout the year each group of Air Force Specialties has a series of classroom and hands-on sessions designed to teach specialized skills as required for contingency operations. All unit personnel attend chemical warfare classes semiannually. The water and waste personnel are instructed in the operation of an erdlator to purify water. Classes on portable runway lighting installation, expeditionary aircraft arresting barrier installation, field food preparation, revetment erection, Harvest Eagle tent erection and Rapid Runway Repair are all conducted periodically throughout the year. Once each year a test of how well these classroom lessons have been learned in conducted — the test is "RED LEARN."

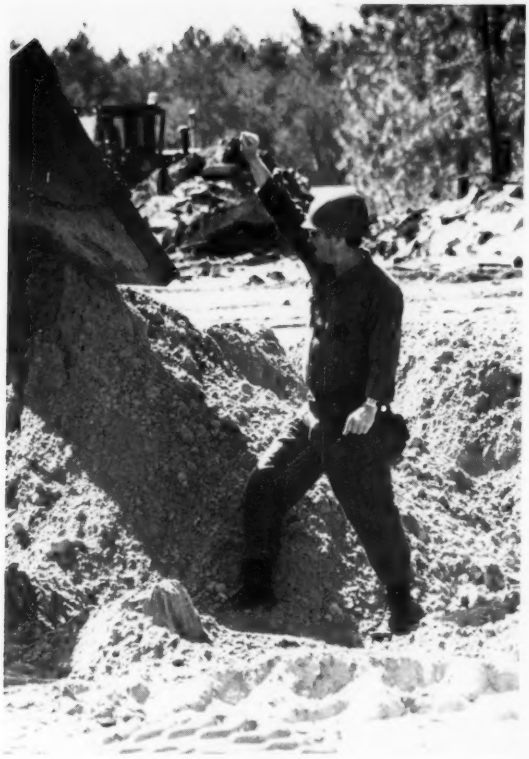
Measuring the repair potholes and width of repaired launch strip.

"RED LEARN 80" began at 0500 hrs, April 2, 1980, with a squadron recall. The simulated message said two increments of RED HORSE, CES I and CES II, were to deploy with their 95 personnel and aircraft loads of heavy equipment and supplies. RED HORSE was not alone in marshalling equipment and people for this exercise. The 1st Special Operations Wing mobility control center also was activated. Each equipment increment was evaluated, inspected and passed as if processing for actual airlift. RED HORSE members were fully processed by the 834 Combat Support Group personnel mobility processing unit.

After a quiet Easter weekend, which simulated aircraft travel time, equipment and people began to move out to set up a bare base encampment near the Prime BEEF/RIBS training site at Eglin AFB Auxiliary Field 4. Batches of equipment were released in time sequence just as from scheduled aircraft and unload timing. Only personnel assigned to each aircraft load, plus those who had "arrived" previously could move the equipment. The employment testing really began in earnest.

CES-I, 14 men with four vehicles and two trailers, set up initial camp. They surveyed the area and began force beddown site planning. Less than 60 hours after initial CES-I arrival, plane loads of CES-II increments began arriving. Perimeter defense fortifications were enlarged and stengthened. Protective aircraft revetments were started to demonstrate the shells of assembling protective structures. A contingency airfield runway lighting system was sot up and made functional. Water from a nearby stream was processed through the water purification unit to be made potable for drinking and field food service operations. The camp site was expanded and the dining hall began replacing C-Ration meals with good warm cooked food. The flow of work was occassionally interrupted by aggressor attacks and clouds of live tear gas.

The biggest training task came on April 10. In today's environment, the base and its runways are integral parts of our weapon systems. The ability to rapidly repair our runways is critical. RED



THIS PAGE (clockwise from top left): Backfilling a bomb crater with earth. Moving large slabs out of crater to it will accept select fill for compaction. Laying the kelock section of the AM-2 aluminum patch. Drilling the lock down bolt holes.

LEFT: Attaching the mat transition ramp for aircraft to roll onto the mat. BELOW: Laying the AM-2 mat patch.

HORSE normally practices repairing a single simulated crater. This practice is designed to build proficiency in meeting NATO's current criteria of repairing three 750-pound bomb-size craters within a four hour period to provide a minimum useable runway. The craters must be capped with an aircraft bearing surface, presently AM-2 aluminum airfield matting. During RED LEARN 80, RED HORSE went beyond the simulated single crater and took on three real holes simultaneously, a task never before attempted by U.S. forces.

The Air Force Engineering and Services Center, who manages the Field 4 site, placed explosive charges and blew three separate craters in the nearby abandoned asphalt runway. Allowable prepositioned equipment and material were available — sufficient matting for three holes, stockpiled select fill and sufficient equipment to equate the RED HORSE mobility vehicles to the standard Rapid Runway Repair package. The "go" was given and the stop watch started. The result? We proved the job can be done. It was determined that the classroom and single crater training techniques were adequate for meeting the three-crater desired level of competency test.

Was the exercise worth it? We think so. Training effectiveness is demonstrated in the real work environment. We applied our training well during Operation RED, WHITE and BLUE where in 11 days we helped erect over 400 hardbacked tent facilities to house 10,000 Cuban Refugees. The lessons again proved themselves by our deployment to Cairo West, Egypt as part of exercise Proud Phantom. There, a water point and purification system was established, a taxiway was widened and hard stands constructed, and along with members of the 4449th MOBSS, we completed all jobs necessary to house; feed and provide work areas for over 650 personnel in two-thirds the programmed time. We are now securing the site, processing the environmental impact statements and insuring range clearance for RED LEARN 81. The RED HORSE people that participated in 1980 said the exercise was a real learning experience — but that's what RED LEARN was all about. E&S

EDITOR'S NOTE: RED LEARN '81 was successfully completed last July.

Lt Col William E. Schaal *Received his bachelor of sciences in 1958 and his master of sciences in 1960, both in civil engineering at Bradley University, Peoria, Ill. He entered active military service in 1960 after teaching engineering at Bradley University for two years. His assignments include being assigned as civil engineering contingency operations officer, AF/LEE, where he participated in the Joint Contingency Construction Requirements Study, Phase II, prior to assuming his current position, deputy commander, 823 CES(HR), Hurlburt Field, Fla. He is a member of SAME.*

"A contingency for the benefit of all"

Pulling Together

By Capt Edward L. Miller

"TEAM SPIRIT" - The term conjures up a variety of images depending upon the demography of the user. To a high school cheerleader, it could mean the entire school turning out for a pep rally before the "big game." The Pittsburgh Steelers may remember it as psyching up and pulling together to win their fourth consecutive Super Bowl. Webster says it best though in his definition of teamwork, "work done by a number of associates each doing a part but all subordinating personal prominence to the efficiency of the whole." This definition is what TEAM SPIRIT 81 was all about.

The Joint Chiefs of Staff have held TEAM SPIRIT exercises in the Pacific since 1976. Each year the

exercises have continued to increase significantly in size and number of participants. TEAM SPIRIT 81 has certainly outdistanced previous exercises in this manner. It also has proven to be the best coordinated and most successful TEAM spirit exercise to date, as attested by several general officers observing the events. It truly demonstrated the capabilies of all services (U.S. and foreign) supporting the Pacific theater to "pull together in a contingency for the benefit of all.

TEAM SPIRIT 81 involved approximately 61,500 U.S. military and 110,000 Republic of Korea military personnel. The United States Air Force, Army, Navy and Marines as well as the Republic of Korea services played active roles in the exercise under the guidance of the Commander-in-Chief, Pacific command, Combined Forces Command in Korea, and the ROK Ministry of National Defense. The Air Force alone brought in about 5,300 personnel in support of over 100 aircraft, in addition to the forces and aircraft already stationed in South Korea. All of these personnel and aircraft had to be bedded down, and that's where the true intent of this article lies - the engineering and services efforts expended to insure the smooth operation of TEAM SPIRIT 81. To begin with the bottom-line, their efforts were monumental.

If nothing else, TEAM SPIRIT 81 clearly demonstrated what a well-coordinated, total engineering and services effort could accomplish. To detail this, we need to start at the pre-planning stage before actual exercise planning officially began. Previous exercises brought out several critical problems which were repetitive and irritative, if not out-and-out stumbling blocks. These ranged from poor site availability for tent cities to inconsistencies in services provided.

With all operations plans, after-actions reports, and "walking experts" available, the one esssential item missing was a plan tell how to build a tent city. Sure, there are publications like AFM 86-3, Vol I, Planning and Design of Theater of Operations Air Base, and other field manuals which offer guidance on erecting specific facilities. However, these are not enough. What was needed was a specific plan, written for the layman as well as experienced professionals, that would spell out who does what, when, where, and who to coordinate with.

To meet this requirement, the Deputy Chief of Staff, Engineering and Services at Headquarters, Pacific Air Forces had put together the "PACAF Tent City Support Plan." It was developed using all available reports, manuals and regulations, then coordinated through all known agencies having previous TEAM SPIRIT experience, and finally staffed through appropriate MAJCOM functional areas. The resulting plan was briefed at two TEAM SPIRIT planning conferences and personal copies sent to everyone that could possible have a need for it. The key to the plan was that it put together not just the engineering and services requirements, but also tied in all agencies involved in tent city operations. This included supply, transportation, security policy, the cadre commander, as well as others. This plan then was the launch pad for succeeding actions.

From this take-off point, a series of events took place which set the mood for the exercise. The major command engineering representative, 314 Air Division engineer and RED HORSE commander visited the bare base sites, evaluated the conditions, and talked with Republic of Korea representatives about repair actions required prior to effectively using their bases for beddown. The end result was a coordinated effort by the Korean engineers, U.S. Army engineers, and RED HORSE which developed the sites into usable locations for tent city operations. This effort also included an outstanding display of AM-2 matting area spot repairs by the ROKAF (with assistance of 314AD/LGDE, HQ PACAF/DE, and RED HORSE) -something which has not been done since the Vietnam days.

During this period, other actions were taking place as well. The MAJCOM engineering and services representatives were developing the requirements for augmenting forces (fire dept, services, engineers) to support beddown operations at two main bases, two joint-use bases, and two bare bases. Tent cities had to be erected and maintained at the main and bare bases; however, after careful evaluation, the decision was made to open contingency dormitories and doubleup other areas so that tent cities would not be required at joint-use bases.

Additional user requirements had to be identified and programmed against a task force. Identification of these requirements was accomplished during the planning conferences and through a lot of leg-work which turned up such things as an additional petroleum, oil, and lubricants (POL) dike for special aircraft fuel; off-load ramps; and several storage facility needs. On top of all this, air transportable hospitals; a newly developed field kitchen from the Army's Natick, Mass., laboratories; laundry facilities, and a host of other items had to be matched against personnel responsible for their erection. The end result was the use of in-theater PACAF forces (two Prime BEEF Teams, RED HORSE, base civil engineers, food service, and billeting personnel), SAC Prime BEEF and Prime RIBS, Air National Guard and Air Force Reserve engineering and services

personnel, and Air Force Commissary Service experts.

From this, one can easily see the complex puzzle that had to be pieced together. Numerous forces had to be identified and notified, CONUS Air Reserve Force volunteers located, time-phasing of the forces established and airlift arranged, orders cut, tent city materials ordered, war readiness materials (WRM) vehicles requested, rations ordered, Harvest Eagle and WRM assets identified, the Natick Lab 9-1 kitchen shipped, and a myriad of other items to be taken care of. The most critical aspect was to insure all materials, equipment, vehicles, and personnel arrived at the appropriate place at the appropriate time in order to insure the bases were ready when the first aircraft and support personnel started to arrive. This complex puzzle was resolved by the dedicated efforts of all the involved engineering and services personnel, especially the key managers: MAJCOM engineering and services project officers, 314 AD engineer, RED HORSE project officer, Prime BEEF commanders, and host-base engineering and services representatives.

Before going any further, this appears to be the best time to point out the critical need to get all other appropriate agencies involved early in the planning stages and maintain continuous contact. This includes such outfits as supply, plans, WRM, security police, transportation, MAC, operations, and users. These people will make the difference in meeting your time requirements or falling on your face.

Additional actions taking place during this time period included RED HORSE developing detailed site layouts and ordering materials for all tent cities, air transportable hospital and 9-1 kitchen agencies identifying their support requirements, Prime BEEF teams identifying WRM vehicle needs, and support base engineering and services personnel setting up items such as morale, welfare, and recreation services. The list of actions could go on ad infinitum, but the main point is that a lot of coordinated effort took place in setting up the engineering and services support for TEAM SPIRIT 81.

Some tips worth passing along are:

- Develop a written plan and insure that all involved agencies receive a copy;
- Bring together the key engineering and services personnel at least once to jointly discuss required actions;
- Bring together the site planners, officers responsible for tent city erection, bare base (cadre) commanders, and appropriate using agencies at least once to discuss detailed layouts and requirements;
- Let everyone know what is going on periodically through update messages; and above all stick to your plan of action unless the mission supported truly calls for a change.

As previously stated, the actual exercise was a success. Much of this was based on the pre-planning and planning actions; however, it also was due to the high quality support provided by our engineering and services people in the field. Prime BEEF teams were required to live under very austere conditions (basic tent, field latrine, and rations) until they could set up adequate living tents, dining facility, latrines and shower/shave units.

The teams put out maximum effort to provide "like-home" facilities for the incoming troops. These included such facilities as arcades, packing and crating, post office, all-ranks club, recreation center with home-made ping-pong tables, laundry/dry cleaning services, barber shop, and a movie theater. Food services provided a variety of meals attempting to take the edge off the field messing conditions. Billeting set up a system of locator cards and tent assignments with incoming first sergeants to allow unit integrity while maintaining a close account of all personnel in tent city. Service call desks were set up

ABOVE: Prime BEEF setting up tent city.
LEFT: Mixed fuel bladder for quick turn-around, Kwang-ju AB.
BELOW: Sign in town outside Osan Main Gate.

either by Prime BEEF or base civil engineer personnel, which offered a repair and maintenance capability within the tent cities. Air National Guard, AFCOMS, and SAC personnel blended in extremely well with PACAF forces in all phases from food services support to providing essential fire fighting capability. Finally, not to be forgotten, RED HORSE proved their worth in contingency operations. The HORSE designed the tent cities, ordered materials, constructed a large-scale fuel dike on short-notice, installed needed aircraft arresting systems, and served as the overall in-country engineering liaison office for all tent city erection operations.

Exercise termination did not mark the end of engineering and services involvement either. While others were packing and getting on aircraft heading home, RED HORSE, food services, and Prime BEEF teams were engaged in reconstitution. They took down all tent city assets, inventoried, crated, and assisted logistics personnel in rewarehousing. Once again this action required many of our troops to live under extremely austere conditions.

To repeat the bottom-line stated earlier in this article, the efforts of the engineering and services personnel involved in TEAM SPIRIT 81 were monumental. They provided conclusive proof that we can meet the challenge of contingency operations by using teamwork, and more appropriately "Team Spirit."

So where do we go from here? The answer is simple and in fact has already begun. We are taking the after-action reports from TEAM SPIRIT 81, and together with first hand experiences from people attending this year's exercise, we will update the PACAF Tent City Support Plan. Each succeeding update and exercise experience will serve to increase our readiness posture and insure our capability to meet the engineering and services mission in the Pacific Theater. E&S

TEAM SPIRIT 81 was a Joint Chiefs of Staff- directed, Commander-in-Chief Pacific Command-sponsored large-scale military exericse held in Korea in March 1981. The exercise involved both United States and Republic of Korea forces and required extensive engineering and services participation. Pacific engineering and services forces involved HQ PACAF/DE, 5AF/DE, 314AD/LGDE, 554CESHR, 3CSG/DE/SV, 18CSG/DE/SV, 6112ABG/SV, 475ABW/DE/SV, 15ABW/DE/SV, 51CSG/DE/SV, 6168 CSS/DE/SV, 6171ABS/DE/SV, and 8CSG/DE/SV. CONUS support came from HQ AFESC/DE, ANGSC/DE, HQ AFRES/DE, HQ AFCOMS/DE and HQ SAC/DE who provided additional Prime BEEF, Prime RIBS, and commissary specialists.

Capt Edward L. Miller *works as a contingency forces officer in the force development division, headquarters Pacific Air Forces, Hickam AFB, Hawaii. He earned his bachelor's degree in civil engineering from the United States Air Force Academy in 1972 and a master's degree in business administration from the University of Oklahoma in 1980. He was recently selected for the Air Force Institute of Technology graduate studies program and will attend the University of New Mexico for a master's degree in soil and foundation engineering.*

EDUCATION WITH INDUSTRY

Energy Management with Eastman Kodak

By Maj Dick Cardinale

Knowledge, experience, and confidence are the wrap-up words the four of us at the Eastman Kodak Company used to describe our ten-month Education with Industry (EWI) tour in Rochester, N.Y.

Kodak employs about 50,000 people in a number of plants and office buildings around the city. While my fellow EWI officers at Kodak were involved with automated office systems, audio-visual management, and distribution networks, I worked in the energy management technical services (EMTS) office at Kodak Park (KP).

I heard about EWI a few years back during a short course at the civil engineering schoolhouse. But the opportunity to volunteer came 18 months ago with a phone call from Howie Underwood at Blueprint. Facility energy was a new option added to the civil engineering area of EWI. The program is designed to develop abilities to apply industrial techniques and approaches to solving Air Force energy management problems.

In general, my desired learning objectives were to examine and participate in Kodak's approach to organization, energy management, conservation, new technology, waste energy recovery, and use of alternate energy sources. Pretty broad, huh! Since I had a mechanical engineering background, Air Force energy management experience, and was expecting an assignment, I applied for the program.

Glad I did! At first the Kodak environment felt a little strange. KP employs 33,000 people in a 2,000 acre portion of the city. I worked in an

eight-story building packed with engineers, shops, and computers. But it wasn't too hard to adjust to a three-piece suit, longer hair, and an industrial atmosphere.

KP consists largely of the photographic portion of Kodak—film, paper, photographic chemicals, etc. It's relatively compact, yet is consumes over 23 trillion BTUs of energy per year, equivalent to a major air command's facility energy. As a cogenerator, KP uses coal for 92 per cent of it's energy. Since 1972 KP has increased energy efficiency by 25 per cent. In recent years the improvement has been at the rate of two per cent per year. The savings thus far are worth $5 million per year to the company.

The workplace is extremely professional. As part of the facilities organization, EMTS is a consultant to all divisions in KP on energy matters. My position as an EWI student—with my boss' indorsement—allowed me to move about in the organization relatively unrestricted. The insight was great!

George Carleton, the EMTS supervisor, was my boss, teacher, and orchestrator during the assignment. He arranged a three phased program: orientation, instruction and participation. The phases meshed, overlapped, and ran together by design. They broke down this way: orientation to company and EMTS policies and purpose; instruction by working with or talking to branch managers, foremen, other engineers, and attending Kodak courses, seminars, and meetings; then, participating in the management structure in heating, ventilation and air conditioning (HVAC) and steam task forces, energy presentations, computer simulations and energy analyses, and attending planning meetings.

My specific work assignments were a meld of Kodak's needs and my learning objectives. Kodak needed help in HVAC audits and peak steam reduction while I desired broader management experience with dabbles in computers and technical studies. Hence, my work revolved around KP's HVAC task force. Management-wise I chaired the HVAC task force; planning for, coordinating, and tracking all audits and evaluations on HVAC systems. Since there was a greater demand for engineers and technicians than there were people available, I devised a desktop survey procedure to prioritize all requests for energy work entering the EMTS section. In the computer area I expanded a program KP used for HVAC simulation. And rounding out Kodak's needs and my objectives in the technical studies area, I worked on energy audits of HVAC supply and distribution systems in one of the film divisions in KP, from data collection through presentation to the customer.

The important educational point—leading to the knowledge, experience, and confidence—is the opportunity to observe, understand, and practice a corporate philosophy in energy management. It's something not available in a classroom.

The energy managment philosophy has some subtle differences from the Air Force: Each building or operation (a "customer") is separately metered—steam, chilled water, electricity, gas or oil. Each customer is responsible for their own energy costs as a separate cost center.

Energy studies and goals are upward directed. (The corporate staff is kept informed on energy related actions through energy steering committees, but rarely forces energy direction. Similarily, the EMTS relationship to their customers is to consult and recommend changes are up to the customer.)

Each customer (for the most part) funds their own energy projects and the return on investment comes back directly to that division.

Other than straight out BTU savings, the KP energy program includes a lot of effort in peak utility reduction. Specifically over the past few years EMTS has helped postpone a $50 million capital expansion to a boiler plant and another expansion to a chilled water plant. Similarily, the section has taken on process energy studies. The results of many of their studies have increased product output at the same or lower energy input. In yet another area, production planning, energy intensive production is scheduled to run during off peak time, daily or seasonally.

In all, the 10 months in EWI at Kodak were facinating. Our energy programs, Air Force and Kodak, are similar in most respects; the information exchange makes the experience beneficial for both. Kodak's behind the program 100 per cent and plans to continue to support an EWI position. E&S

Maj Dick Cardinale *was assigned to the Energy Directorate at the Air Force Engineering and Services Center following EWI with Kodak. He holds the bachelor's and master's degrees in engineering from the Newark, N. J., College of Engineering, and earned the master of sciences degree in facility management at AFIT's School of Systems and Logistics. He has served at Goodfellow AFB, Tex., Wakkanai AB and Misawa AB, Japan, Kwang Ju AB, Korea, and at Tactical Air Command headquarters at Langley AFB, Va.*

EDUCATION WITH INDUSTRY

SABBATICAL OR HARD WORK?

by Capt John P. Selstrom, Jr.

I originally applied for EWI consideration at the base education office. To tell the truth, I didn't know much about it but it was an opportunity for me to do something different.

Six months later I was notified that I would be going to some place called "Dimjim" or more properly "DMJM," (Daniel, Mann, Johnson, & Mendenhall) in "L.A." (Los Angeles, Calif.). What's a Dimjim? The answer: the fourteenth largest multi-disciplined architect/engineer company in the country (the largest privately owned), with 1,500 employees worldwide, designers of a couple of thousands of schools, military bases and capabilities including the Titan I missile system definitive facilities, several missile installations, the Fermi nuclear research lab, and the aerospace propulsion test facility (ASTF) at Arnold Engineering Development Center, to name a few.

Upon arriving I found 400 people in the office who wanted to help me make the most of the next 10 months.

For the first month, I visited all of the "support" areas of the office - personnel, accounting, taxes, payroll, computer operations,and publishing. These areas provide a multitude of services to the "operating" employees of DMJM.

Next, I went on to the first "operating" area -the energy group - and a job to do. DMJM contracted with a major aerospace company to evaluate the condition of their 16-year-old power plant and to recommend the actions required to insure that the plant would run economically for the next 20 years. With three DMJM engineers, the job was completed in three weeks.

The next project was a response to request for proposal for design of a steam injection recovery system for an oil field. I found it difficult to read and understand a statement of work written by someone else from the "other side." The importance of writing a clear, concise, unambiguous statement of work was really impressed upon me. The next stop was the A/E group. There, I learned how DMJM accomplishes construction cost estimating, scheduling, design production, architectural design and proposals.

The second proposal that I was able to participate in, was the development of a submittal for the M-X main operating base master plan. DMJM, in a joint venture with another firm, was selected to meet with the final selection board to discuss their capabilities to accomplish the program. The push to put an effective presentation together was on. I was very impressed with several things. First, the method for understanding the client's needs. Every word and sentence of the **Commerce Business Daily** announcement and the statement of work became important. Second, the amount of time, money, and effort that goes into something which has a starting probability of success at less than 25 per cent. And third, the firms's expectations that government agencies will be fair, imparital, and select the firm best qualified to do the job.

After traveling through the A/E group, I worked in the planning group on a development plan for downtown San Jose. The developer used the urban design concept (that DMJM developed) to convince the city redevelopment agency that he could do the best job in rebuilding the downtown area.

The next stop was in the civil group. For a time, I worked on civil specifications for King Faisal University in Saudi Arabia, then drawings of a railroad yard in Borax, Calif., and finally, participated in the final inspection of a new wide-body runway at Ontario International Airport.

AFIT travel funds are available to visit company-designed projects in progress. I pooled all my eggs together and went to observe the management components involved at Arnold AFS, Tenn., in the $432 million ASTF, the largest "jet engine test stand" in the country, capable of simulating altitudes to 100,000 feet. Designed by DMJM in a joint venture with another engineering company, it is being constructed by a contractor under the supervision of the Army Corps of Engineers.

The Los Angeles office coordinates the work, staffs the overseas offices all over the world, and writes many of the major project proposals. I helped put together a presentation for an aircraft maintenance airfield and supporting community in Saudi Arabia. The people around DMJM let you work on as many projects as you want. It was very satisfying to look at the final product and see my work on organizational charts, project activity diagrams, experience matrix diagrams, and other visual aids. (DMJM won the job.)

I last worked for TMSI (Technical Management Services, Inc.), a wholly owned DMJM subsidiary which provides construction management services for the company. Here I worked on the beginning construction management contract Bechtel/DMJM (a joint venture) for the

$300 million expansion of Los Angeles International Airport. I learned something about cost estimating and communicating on a detailed cost estimate of civil and structural work for the new domestic terminal and, second, on part of the Project Procedures Manual (PPM). And my cost estimate wasn't just an exercise. Used in the design review process, my "suggested" scope control section is in the PPM, verbatim.

I was also involved with man-loading space shuttle facility construction schedules, a dozen other proposals, a visit to the Denver regional office, and the company's engineering and business computer systems. It's sufficient to say that the people at DMJM did not let these 10 months become a sabbatical leave.

So, what's the value of all this to me and the Air Force? Well, four years ago, I didn't really know what an A/E was, "now I are one" so to speak. The Air Force depends heavily on A/E's for contract design work. It helps to understand how they operate, their financial constraints, their organizational approach to design, their way of keeping up with the state of art and, also understanding how they approach their side of the government-A/E relationship.

And what's in it for the individual? An appreciation and understanding for the "standard of the industry," developed by actually working in it. A chance to see another side of professional organizations such as the AIA, ASCE, SAME, and PMI. An opportunity to meet and work with outstanding professionals.

Some look at EWI and say, "How can that help my career?" Sure, it's not PME or a masters, but job knowledge gained at DMJM has provided me with an understanding of architect-engineers that will assist me in successfully applying myself to any Air Force job in the future. But then it was a lot of fun too, in fact, I hear there is now an EWI slot at Morrison-Knudsen..... E&S

Capt John P. Selstrom Jr., *is a native of Missoula, Mont. A graduate of the Univesity of Colorado, he holds baccalaureate degrees in environmental design and in business. He has taken graduate work at the Air Force Institute of Technology, Wichita State University, and the University of Alaska.*

EWI: WHAT DOES IT MEAN?

By Maj Roger S. Alexander
Program Manager

Each year approximately 125 Air Force officers enter a unique 10-month program, during which they will rarely wear the uniform, and will integrate themselves into the management and engineering communities of cooperating private industries and firms.

Officially, the name of the program is "Education with Industry" (EWI). I propose that the identity is a misnomer, but only in the sense that the word education subsumes experience, involvement, exchange, and challenge; and the result is dynamic in the sense of self-appraisal, comparative thinking, and—to an extent—technical transfer of concepts and processes through an individual.

Among the programs offered are several with direct application to the Engineering and Services career fields: civil engineering — airfield industrial maintenance, construction, design, facility energy, corrosion control, land-use and regional planning; services — billeting, food services, and retail management.

Application is directly to the Air Force Institute of Technology, as outlined in Air Force Manual 50-5 (available in the base education office), or by contacting the AFMPC career monitor appropriate to the AFSC of the applicant. While enrolled, students are considered to be at a permanent duty station. Allowances are basically the same as for other officers on duty detached from base supporting activities. It is up to students to arrange for their own housing. Movement of household goods and other expenses at the beginning and end of the tour are handled in the same manner as for students enrolled at civilian institutions. Among the responsibilities for students is completion of three written reports covering the period of enrollment due in December, March, and at the conclusion of the program. In the pages to follow are selected student monographs outlining the experiences of several E&S officers who have just completed their 10 months with industry.

Several points should be remembered by readers. First, AFIT does provide for some travel support for students. This travel money can be apportioned for several trips, or taken all at once (as one student chose to do).

There are certain restrictions, since many of the firms are actively or potentially engaged in business with the government. A particularly sensitive issue is Air Force Regulation 30-30, which is in no way waived during this period. Ad-

cont'd on page 32

Education with Industry

From bedmaking to budgets

by Capt Barbara G. Lauen

I once told a career monitor that if I could progress through the ranks and still remain a billeting officer the rest of my Air Force career, I would. Of course that was wishful thinking, or so I thought until a year ago when I was selected for Education with Industry (EWI) through the Air Force Institute of Technology (AFIT). I learned that I was to spend 10 months with the Marriott Corporation in the Washington, D.C., area learning hotel/motel management.

I was very fortunate to learn of the hospitality industry through Marriott and in particular to do so at the Twin Bridges, the original Marriott hotel. Because it is the original, it has the problems of an aging property, something many of our billeting operations are facing. Too, there was an ongoing renovation project at Twin, which has both hotel and motel rooms, again like the Air Force. I also had the opportunity to see other Washington Marriott properties, seven operational, two more under construction and another scheduled to open in March 1982

Marriott has developed a well defined training program for its managers called Individual Development (ID), exposing each, including vice presidents, to other departments. Since the AF had not had billeting management in EWI previously, there was no precedent to follow so I studied two ID manuals: Housekeeping and Front Desk Management. Each provides a master task list allowing individuals to cover the material at their own speed. One of my tasks was to clean five guest rooms. In spite of the fact that I received a great of teasing from some AF friends about spending their money to make beds and clean bathrooms, I learned that it is hard work! (My body still aches when I think about it.)

Marriott's philosophy is to properly train and care for the employees and they in turn will take care of the guest who will keep coming back. Within the housekeeping department there is a printed training schedule for each hourly position and each job description lists all tasks required in a chronological order. Training is continuous with monthly training quotas for each department. Throughout the hotel, job enhancement through cross-training is used. For instance, the front desk clerks received cross-training experience in housekeeping, teaching appreciation for another's job problems, fostering mutual understanding. A 12-week supervisor training course is offered to those employees recently made supervisors or whose performance indicate they are potential supervisors.

I didn't spend all of my 10 months with my nose in a book though. Along with other Marriott management trainees (a varied group of individuals, some having many years of experience in the hospitality industry and others fresh out of college), I attended a week-long seminar at the

What does it mean (cont'd)

ditionally, there is a protocol provided to the industrial participants which outlines the bottom-line meaning of this regulation and certain other aspects of public law.

It should be remembered that the industry provides the opportunity for this form of technological transfer on a "no cost" basis. This means that the Air Force is responsible for the salary of the individual involved, while the participating industry provides a coordinator, a program, and the opportunity to observe, participate and be involved with the activities of the firm. Expenses incurred under this program are generally less than formal education with civilian institutions, due primarily to the fact that there is no tuition.

Feedback from industry is generally favorable. Most firms have continued their participation over the years loyally and in some cases with increased opportunities. Students have been overwhelmingly favorable. There is the feeling that the involvement is an opportunity without parallel in the Air Force, and invaluable in establishing professional perspectives on one's place in the industrial universe. Specifically, students have found the insight into industrial approaches useful into the span of their careers.

At the outset, my position was that EWI constitutes something more than the traditional values associated with the word education. It also connotes—potentially—less. There can be a synergy of student interest and the firm's energy and activity involved in the program. Occassionally, the result is passive, but still of value in later years. For this reason, EWI is a highly selective program in which the officers who are chosen appear to us to have the best potential for achieving the maximum yield, for the Air Force, their career fields, for themselves, while continuing the interest of the industries involved. E&S

Dulles Marriott entitled, "Introduction to Management." Much of what we covered was a reinforcement of management training taught at Squadron Officer School and the Air Command and Staff seminars. Team effort was stressed and by the time the week was over, I had been on a team with just about everyone of the attendees. Air Force management training is right in line with private industry.

However, our budget management could use some improvement, especially in the area of labor costs. Marriott's scheduling procedure is based on the budget, and in turn on the projected rooms the hotel forecasts it will sell each month. Each Wednesday the reservations department does the current forecast used by housekeeping to work out the schedule for the coming Saturday thru Friday adjusted to daily selling status. Staffing guidelines regulate each position by occupancy percentages. As the occupancy decreases, the number of hours for each position is reduced and vice versa. Actual weekly payroll costs are compared to the budget projections. Thus you have a progressive chart by which to monitor your financial status.

Opening a new property for Marriott is very much like one of the field deployments the Air Force has annually—only with much more comfort and style. Additionally, I observed and participated in two different task forces opening new Marriott hotels in the Washington metropolitan area—the Tysons Corner Marriott on the Beltway and the Washington Marriott downtown.

The task force is a major training tool, and serves as a reward for those employees across the US who have been outstanding performers, receiving corporate level recognition when they are nominated to a task force. The training "mission" of each task force member is: (1) to train the locally hired employees to do their jobs the "Marriott way" and (2) to serve along with the property managers and new employees as pseudo guests/customers.

The task force lives in the hotel (I did not), thereby providing the "guests" whose rooms need servicing by the housekeeping employees. Everyone eats in the employee cafeteria or the hotel restaurant, thus providing training for the cooks, chefs, hostesses, waiters and waitresses. On certain days the task force is required to order their meals from room service so that they get their training. Task force members are authorized laundry/dry cleaning service and limited number of phone calls, thus the bellmen gain experience on picking up and delivering the "valet," the hotel laundry trains its people, and the telephone operators get experience handling guest calls.

I spent four days observing the task force at Tysons Corner. Pressure was on to have the hotel in operation in time for the presidential inauguration as committments had been made for more than 200 rooms, even though the contractors were behind schedule. Suffice it to say that I learned how essential organization, communication, and command and control are to such a monumental task.

Between the two opening task force experiences, I returned earlier than planned to Twin Bridges and observed one of the busiest weeks during my EWI -inaugural week. Before going to Tysons Corner I worked with Twin Bridges reservations. To sell out without overselling or having losses from no-shows, the reservations manager required that all reservations be for at least three consecutive nights, and full advance deposit —nonrefundable after a certain date. These actions proved most successful. Many hotels in the area discovered that some of their confirmed reservations were no more than "back-ups" for people with reservations elsewhere.

In February I went downtown to the new Washington Marriott, the first Marriott ever inside our nation's capitol. My "two weeks" of task force participation lasted until the end of April. Tysons Corner opening lessons were applied here most successfully. Each day was preplanned, assignments given and supervision provided, working around contractors, who were not finished at this property either. Lack of keys, restricted access to our work areas and to the service elevators hampered us. Still, we completed setting up the 349 rooms in time for the grand opening on March 3.

While there I assisted the director of services in setting up the total operation of the housekeeping department: developing job descriptions, payroll records, inventory accounting, purchase logs, determining required manning levels and refining the budget. Many of the tasks performed during my ID were repeated but this time there was total understanding of the "why" and the "how." All of this knowledge would have proved invaluable to me when I was a base billeting officer. Instead, as I look back I realize that I performed my job more by rote rather than by reason.

Training is the key to success in billeting management— motivating, quality standards, maximum production through training. In 10 months, I learned that the level of success is in direct proportion to the level of training. Hopefully, we will be able to develop some training aids for our billeting personnel using the Marriott's "individual development" concept. E&S

Capt Barbara G. Lauen *is a graduate of Judson College, Marion, Ala., with a baccalaureate degree in sociology. She is a graduate of Squadron Officer's School, Maxwell AFB, Ala., and completed the Air Command and Staff College seminar program.*

EWI with ARA

by Capt Gary C. Bradham

The end of Fiscal Year 1981 marks the fifth year ARA Services, Inc. has participated in the USAF Education with Industry Program (EWI). Through the years, this program was found to be mutually beneficial to the Air Force and ARA.

During the ten month tour of duty, the officer studies the management philosophies and practices, operational methods and systems, and administrative procedures of the company. Since ARA is the largest service management company, ($3 million annual sales) the officer has ample opportunities to prepare for future Air Force service management positions.

The ARA EWI program is intended as an individualized educational effort with flexibility to meet the needs of the officer. ARA's approach to the program follows the philosophy of J.W. Hull, "The man who wants to develop himself does. The man who wants to be developed rarely is." ARA makes the necessary resources available; the officer uses those resources for his/her professional and technical growth.

The first phase of the program is the orientation phase. During this phase, the officer explores and learns the workings of ARA at the corporate level, the area level, down through the unit level. Since ARA uses the individualized educational effort, this part of the program can also be used for personal development. ARA has approximately 20 training programs which are available to the officer. All of these programs may be attended within the first few months of the EWI program with proper scheduling.

The first phase of the program is also used to receive first hand knowledge of the systems and procedures used in the food service industry. ARA is the perfect company to observe these procedures. They are a systems-oriented company using the most up-to-date technology in food service management. Their computerized food service program is renowned throughout the industry. They expend more time and effort than most companies in the procurement of food and non-food items. Their supplier authorization system parallels that of the Air Force's subsistence procurement system. A lot of energy is expended in the research and standards area, insuring quality recipes, food production techniques, and merchandising programs.

Following the orientation phase, the work projects or areas for further exploration are selected based upon individual needs and interests. The goal here is to satisfy the general and specific desired learning outcomes of his program. My objective in this phase was to become as competent as possible in the systems and procedures used to provide quality food service. To accomplish this objective, the majority of my time was directed towards teaching ARA training programs. I was welcomed by ARA corporate managers by assuming one of their training specialist positions. During this phase, I taught 16 technical training courses to ARA managers ranging from inexperienced managers to competent experienced middle managers. A side benefit to my training approach was the opportunity to meet field managers and talk to them about problems experienced at the unit level. This allowed a complete exposure to the systems and procedures and how they are received and used at the unit level.

The most rewarding experience I had during this phase of the program was being appointed the project manager for four nationwide district manager workshops held for all the operational middle managers of ARA's institutional food service sector. This endeavor brought challenges in the administration area of setting up a conference (approximately 250 attendees) including many high level individuals. Additionally, I was given the assignment of designing and executing a complete and meaningful program which could hold the interest of the participants. The theme of the meeting was to bring ARA's managers together as a team to ensure they were providing the same quality service while using the same set of standards of operation in all their 2,000 units. The workshops took place during the month of June and provided an exciting conclusion to my EWI program.

Although the EWI program is a non-degree AFIT program, services officers should strive to be selected for this assignment and take advantage of the opportunities and educational experiences offered by industry. As a result of my participation in the Education With Industry program, I have obtained a new perspective of food service management. I found the program to be exciting and rewarding and feel the training will be invaluable to me as I embark on the continuation of my Air Force career. I have high hopes of taking this new knowledge of food service management and systems back to the Air Force to insure that our food service program is superior. A special "thanks" should go to ARA Services, Inc. for their willingness to share their resources, accomplishments and experiences in the development and execution of the United States Air Force feeding program. E&S

EWI with DFW

By Capt Thomas M. Riggs

How many times have you wondered, "How do they handle maintenance needs at a large civilian airport?" Beginning with the 1980-81 program, EWI now provides a chance for CE officers to find out. This super opportunity is provided at Dallas/Ft Worth Airport.

Early planners for DFW Airport wanted to ensure that the airport had plenty of space to operate without worrying about possible encroachment from nearby communities.

The facilities maintenance organization is responsible for maintenance on the airport as well as for operating a central utility plant that provides steam and chilled water to the terminals and hotels. The major differences between DFW facilities maintenance and standard base civil engineering organization are:

1.) Tenants (airlines and other businesses on the airport) have maintenance responsibility for the facilities each occupies.

2.) Engineering design, contract inspection, and planning responsibilities are conducted by a separate directorate.

3.) Fire protection responsibilities are combined with police activities in the Department of Public Safety.

The EWI program at DFW Airport allows an officer to become involved with all aspects of facilities maintenance. The program provides a super background for assignment as chief of operations. (An added benefit is that the officer assigned to DFW works for Brig Gen, retired, Archie Mayes, a gentleman well known in AFCE channels, who is the director of facilities maintenance. His interest in the program and the insight he provides concerning AFCE history are invaluable.) The two primary program phases — after a short orientation — are each about 4½ months long and concentrate first on facilities maintenance and then on utility plant operation and energy managment.

My time spent in facilities maintenance centered around hands-on experience with each of the maintenance shops. Shop foremen were very enthusiastic about the program. They would seek me out to tell me of scheduled maintenance tasks I had not yet seen. This fluid arrangement allowed me to get in on activities not that visible yet critical to the airport. As an example, to insure a reliable airfield lighting system requires constant attention to finding and repairing ground faults in the underground cable. I worked with the technician using a fault finder to detect and repair faults that degraded the circuits. At another time I was with the pavements crew working to mudjack some of the sinking concrete pavement around the airport. The north Texas "black gumbo" is notorious for shifting under the roadways. A mudjack crew is busy most of each summer.

My time was not limited to just maintenance. I also had the opportunity to work with the fire chief to help formulate off-road mobility requirements for their replacement crash vehicles.

The 4½ month tour with the utilities branch provided me much needed insight into the operation and maintenance of a large utility plant. The plant generates steam to drive turbines that produce chilled water for the airline terminals and hotels. Steam is also provided to the customers for building heat and hot water. A major portion of my time was devoted to assisting in the development of a preventive maintenance program for utility plant equipment. The exercise was a perfect introduction to equipment needs and operating procedures.

While working in utilities, I also observed many energy conservation initiatives in effect at DFW that have reduced energy consumption considerably. One of the most effective was the installation of by-pass piping that allows the system use the cooling towers to produce chilled to water by direct cooling with outside air. This procedure can be successfully used whenever the wet bulb temperature is below 55°, a situation occurring about 30 per cent of each year. The direct cooling cycle allows shutdown of the turbine-driven chiller and thus reduces energy consumption.

In addition to the experience obtained from observing, I think a key benefit is the chance to reflect and compare Air Force experiences to DFW observations. If you are an officer anxious to be involved with the maintenance shops, a year in EWI at DFW airport will prepare you well for base level maintenance responsibilities. I highly recommend the program. E&S

Capt Gary C. Bradham, *earned the bachelor's degree in business from the Citadel, and the master's degree in business administration from Louisiana Tech University. He is assigned to headquarters USAFE.*

Capt Thomas M. Riggs, *AFESC/DEMG, earned his bachelor of sciences in industrial engineering at the University of Arkanasa, and his masters in facilties management at the AFIT School of Systems and Logistics.*

CESMET tips

The Air Force Civil Engineering and Services Management Evaluation Team (CESMET) reviews, evaluates and assists Base Civil Engineering and Services functional areas in accomplishing their mission in the most effective and efficient manner. This department is designed to pass along new ways to do the job better.

CIVIL ENGINEERING

The recurring maintenance program (RMP) is one of the keys to a successful civil engineering operation. Here are some things that the bases are doing that have the more effective RMPs.

The foremen and superintendents periodically "fine-tune" the RMP, looking at the following areas:

- Remove all work from the maintenance action sheets (MAS) that no longer needs recurring maintenance or inspections.
- Make sure new/replacement equipment and systems are added to the RMP. Also, as old equipment is removed, becomes inoperative, etc., remove it from the MAS.
- Match the standard hours, crew sizes and frequency of visits to the tasks on the MAS. The standard hours and tasks on the MAS should agree with the new EPS Manual AFM 85-59 on recurring work. Planners and shop supervisors should work together toward this goal.
- If applicable, make sure stop/start dates are used.
- Periodically reconcile the RMP and MAS with the in-service work plan.
- Ensure actual hours used are reported in lieu of estimated hours.
- Ensure accurate information is maintained in the RMP, i.e., original cost, date installed, etc. This information is needed for planning component/system replacement.

Supervisors need to verify the execution of recurring maintenance. Periodically walk through mechanical equipment rooms. Observe the craftsmen at work on recurring maintenance. The execution phase is the proof of your program.

CONTRACTING

The Air Force Service Contract Advisory Group (AFSCAG) has produced a series of performance-oriented statements of work (SOW). These SOWs are being implemented by bases and many questions (and some deficiencies) are surfacing. Don't procrastinate about iden-

tifying any omissions, questions on interpretation, areas needing clarification, etc., to your major command AFSCAG representatives.

The sooner the SOWs are purified to correct unforseen weaknesses, the sooner everyone will benefit -- so keep those cards, letters and phone calls going to your MAJCOM personnel.

PERSONNEL AND TRAINING The commander's update briefing is an excellent forum to present information and problems to high level management personnel. Have you invited your chief of personnel to attend this briefing? We are having problems with skill levels, manpower availability, on-the-job training, training courses, etc., and the personnel chief can provide a valuable input to your briefing.

SUPPLY Are your material control personnel manually preparing the residue (excess) listing? We see many bases that are manually preparing key punch cards for residue items and handcarrying the card deck to supply or data automation for an 80-80 listing. All updates require a new key punch card to be created. There is a better way to prepare the listings! We have seen several bases that are using the BEAMS optional user requirements (OUR) file for residue management. Updates can be accomplished through the remotes and new listings can be called out through AFOLDS retrievals.

BUDGET How are your supply targets loaded for funds in the civil engineering complex? Is there a need to load supply targets down to the cost center level for effective funds management? We don't think so! We still see bases unnecessarily loading targets down to cost center level. Since control of the supply program in civil engineering is not by cost center, why create the extra workload? To simplify the process, only load the supply funds target to responsibility centers such as operations, BCE overhead, fire department, etc.

SERVICES Mortuary affairs training is an area that requires emphasis. A well organized training program is necessary to keep alternate mortuary officers and search and recovery team members up-to-date on current procedures. The mortuary affairs personnel at AFMPC have developed an excellent set of training films for your use. These films are:

Course #	Title
76 04A	Search and Recovery of Remains
76 04B	Identification of Remains/Inspection of Mortuary Services and Supply
76 04C-1	Inspection of Remains
76 04C-2	Inspection of Casket and Shipping Case
76 04D-1	Primary (Funeral) Expenses
76 04D-2	Secondary (Funeral) Expenses

SILVER ANNIVERSARY

Hennessy Trophy builds excellence

by Capt Danny J. Wilkerson

The 1981 Hennessy awards program took place in May at the Hyatt-Regency Hotel in Chicago. This event, held annually in conjunction with the National Restaurant Association's (NRA's) Hotel Motel Show, commemorated its silver anniversary and 25 years of progress and professionalism within Air Force food service.

Keynote speaker Lt. Gen. Richard E. Merkling, vice commander, Air Force Logistics Command, presented the single unit trophy to the U.S. Air Force Academy airmen dining hall and the multiple unit trophy to Eglin AFB, Fla. England AFB, La., received the runner-up award for the single unit competition. Tempelhof Central Airport, Germany, took the runner-up honors for the multiple unit category. HQ AFRES selected their 934th TAG, Minneapolis-St. Paul, Minn., IAP, for the special award to the Air Force Reserve. These bases can indeed be proud of their accomplishments, and their much deserved recognition.

Recognition is one of the three major purposes of the Hennessy. A second purpose is the improvement of dining hall operations and service. Preparation, serving techniques, sanitation, and management are nurtured and encouraged by it. It promotes their excellence and its sponsors share state-of-the-industry practices and technology with program participants. Personnel training and development is the third reason. The Hennessy not only identifies training needs, but also helps in meeting these needs through scholarships and other training media. This is significant, since skilled personnel are becoming increasingly crucial to food service. The Air Force needs trained professionals to meet the requirements of advanced technology and austere manning and budgeting. These and other challenges led to the Hennessy's creation in 1953.

The Beginning

In that year, President Eisenhower directed that military food service be studied by the Commission on Organization of the Executive Branch of the Government. Mr. John L. Hennessy was appointed chairman of a task force to analyze its needs and shortcomings. A noted hotel and restaurant executive from New York City, Mr. Hennessy was then vice president of the Hilton and Statler Hotel Corporations. During World War II he chaired the American Hotel Association's food committee and in 1946 led the Secretary of War's food commission. He and his staff studied and scrutinized military food service in depth. Their observations and recommendations were many, and underscored the need for professionalism and recognition within food service. A copy of their report was sent to the Air Force Services Division of the Air Material Command at Wright-Patterson AFB, Ohio.

Mr. Roger Merwin (currently deputy chief of the Food Management Division, HQ AFESC), along with other staff members, concurred with its findings. They began working on a recognition and improvement program which they hoped would attract sponsors from the food service industry.

Mr. Hennessy, meanwhile had become deeply involved with the Air Force's food service program. He was assisting in the design of the Air Force Academy cadet dining hall at the time of his sudden death in 1955. It therefore seemed only appropriate to name the fledgling program in his honor. The awards committee readily found supporters in the International Food Service Executives Association (IFSEA), the NRA, and Society for Foodservice Management (SFM). Thus the Hennessy was born. 1957 saw the first annual award going to Charleston AFB, S.C. The program was an immediate success, largely because of the enthusiastic support of its sponsors, both within the Air Force and industry.

IFSEA eagerly underwrote the first program. An international organization of more than 7,000 members, it is dedicated to the progress of the food industry, its prestige, and food research. Likewise, NRA contributed heavily to the Hennessy's cause. A national voice established for the advancement of the restaurant industry, the NRA provides educational and management assistance to its members and represents them in legislative efforts related to the food industry. SFM, specifically the part then known as the National Industrial Cafeteria Manager's Association (NICMA), was also a key player in the program's vitality. The SFM is the only national association exclusively devoted to the needs of vending, cafeteria, and other group feeding operations that serve business and industry employees.

These professional organizations contributed much needed hospitality, trade media publicity, and representatives to judge the competition. Then, as now, their representatives, known as Hennessy evaluators, pay all expenses associated with the evaluation

trips with the exception of government provided transportation.

The Competition

In January of each year, the Hennessy evaluators attend a pre-evaluation meeting for orientation on Air Force food service. There they are assigned to either the single or multiple evaluation team, along with a representative from the Food Management Division at HQ AFESC. Their assignments are based upon their experience and skills, in order to provide balanced areas of expertise for both teams.

The single unit team is composed of two industry representatives and an AFESC member. They evaluate single category nominees. These are bases that serve more than 90 percent of their meals (except those served in alert and flight feeding facilities) in one dining hall. The multiple evaluators, also a three-person team, look at the multiple category nominees. These are operations that do not qualify under the singles criterion. Nominees are selected annually by the major air commands on the basis of their food service excellence.

The actual evaluation takes place each March and is based upon Air Force Form 1038, Food Service Evaluation Record. This management tool examines 12 general areas of food service interest. It is used by the major air commands in their nomination efforts and base food service operations in their routine self-inspection programs. The form assigns a weighted point value to each of the 12 areas. Each team member completes a separate form for each of the nominees in his or her category The scores are then reviewed and averaged to obtain a team score for each nominee. The two highest scores determine the category's winner and runner-up. They, along with the other competitors, are officially recognized at an NRA-sponsored Hennessy awards luncheon given each May.

Lasting Effects

The Hennessy evaluators' participation does not however, end with the awards ceremony. They then become members of the Hennessy Travelers Association by virtue of their evaluation efforts, and as such, are often called upon for advice in Air Force food service. Tangible results of the technical assistance and suggestions are many. The present food service accounting system, the Hennessy evaluation form (AF 1038), and base food service associate memberships in trade organizations are but a few examples.

The Hennessy also pays dividends in awareness of the Air Force and food service missions. Hennessy evaluators see a broad spectrum of the Air Force mission and its requirements. As a result, they become ambassadors of good will for the Air Force and the Department of Defense. The program's competition and publicity also enhance commanders' awareness of food service's importance to the Air Force mission, and the support it requires to do its job. Increased command support and interest invariably lead to innovative and more professional food service programs. Thus, the dining hall patrons are the ultimate beneficiaries of the competition. In summary, the Hennessy is indeed proof positive that industry and the Air Force work together to improve the quality of life for today's airmen and ultimately, to strengthen our nation's defenses. E&S

Capt Danny J. Wilkerson *is assigned as chief of the USAF food management assistance team at Engineering and Services Center, Tyndall AFB, Fla. He is a 1970-graduate of the University of Kentucky with a bachelor's degree in geography, and holds a master's degree from Central Michigan University in management and supervision.*

Directorate of Engineering and Services

Current Emphasis

a brief commentary on significant developments

RED HORSE EQUIPMENT PREPOSITIONING at Spangdahlem AB, Germany, will significantly improve RED HORSE response capability to a European conflict and avoid lengthly sea movement to Europe. Equipment will be controlled by an operating location of the 819 CESHR. (Maj Murphy AFESC/DEO, AUTOVON 970-6128)

NORTH FIELD EXERCISE FILM--The accession numbers to use when ordering the North Field Exercise film from the USAF Audio Visual Library are: 52913-MP (for 16mm film), and 52913-VT (for 3/4 inch video tape). (Mr Langford, AFESC/RDCR, AUTOVON 970-6312)

RECENT RRR TECHNICAL REPORTS on bomb damage repair are: ESL-TR-80-42, "Small Crater Expedient Repair Tests;" ESL-TR-80-43, "Evaluation of Vibratory Rollers for Bomb Damage Repair;" and ESL-TR-80-45, "Flush AM-2 Mat Patches for Rapid Runway Repair." (Maj Carter, AFESC/RDCR, AUTOVON 970-6313)

CATHODIC PROTECTION FOR BASE WATER STORAGE TANKS--Automatic potential rectifiers are not maintenance-free, cost three times as much, fail more often than manual rectifiers, usually cannot be repaired in-house and are usually down for repair. Automatic rectifiers are advantageous only when water chemistry changes drastically and often. (Mr Lewicki, AFESC/DEMM, AUTOVON 970-6352)

UNCONVENTIONAL ROOF SYSTEMS--IMC 80-5 to AFM 88-15 requires that these systems (elastomeric, modified bitumen and spray-applied polyurethane) receive advance approval of HQ USAF/LEEE and HQ AFESC/DEM. (Mr Reeve, AFESC/DEMM, AUTOVON 970-6362).

TESTING AND CONSULTATION SERVICES provided by the Bureau of Mines' industrial water testing laboratory, referenced in AFR 85-12, Vol I, and AFM 85-31, will be discontinued effective Sept. 30. Efforts are underway to replace this service either in-house or under contract. (Mr Meyers, AV 970-6355, or Mr West, AUTOVON 970-6353, AFESC/DEMM)

AIRFIELD EVALUATION PROGRAM--AFR 93-5 was revised (May 15, 1981) implementing the Pavement Condition Index method of conducting condition surveys, better describing the evaluation and skid survey procedures and outlining the procedures for conducting roughness surveys. (Mr Greene, AFESC/DEMP, AUTOVON 970-6334)

LAUNDRY AND DRY CLEANING SERVICE CONTRACTS--Procedures developed for contracting base level laundry and dry cleaning service requirements are being tested at Luke AFB, Ariz. (contracting by weight) and Travis AFB, Calif. (contracting by piece count). (Mr Maulden, AFESC/DEHS, AUTOVON 970-6180)

BUY COMMERICAL--Commercial frozen meals ("TV Dinners") are authorized as a replacement for the specification "Meal, Flight, Cooked, Frozen," to be used for flight feeding and as an alternative to box meals for ground feeding. (Mr Hoffman, AFESC/DEHF, AUTOVON 970-6215)

SHOW AND TELL--Air Force Manpower teams recently visited the Prime RIBS training area at Eglin AFB. If you have a highly visible operation or training facility actually showing such an operation to someone (instead of just telling them) can instill a greater appreciation of manpower requirements. In this case, actually seeing the Prime RIBS operations resulted in mutual aggreement between HQ AFESC and AFMEA personnel to revise and improve the existing unit type codes used for wartime planning. (SMSgt Charles Rumsey, AFESMET/MEMP, AUTOVON 970-2076)

AF AUTOMATED FOOD SERVICE OPERATIONS SYSTEM (AFSOS) software development is scheduled for completion in early FY82 by the Army's Natick Lab with testing to begin mid-FY82. System introduction at all Air Force bases under the A La Carte system begins in late FY83/early FY84. (Capt Kelly, AFESC/DEHF, AUTOVON 970-6199)

GRADE REQUIREMENTS of each civil engineering career progression group (three digit AFSC, e.g., 542XX) are being restructured to provide more supervisory positions and limit retraining at grades above staff sergeant. The project will take about five years to complete. (SMSgt Trueblood, AFESC/DEMG, AUTOVON 970-6396)

AFOSH STANDARDS--Civil engineering standards are currently being prepared for use by shop supervisors. Once they are published, they will be a valuable tool for first-line supervisors to use in reducing mishaps. (AFESC/DEMM, AUTOVON 970-6362)

"PASSIVE SOLAR DESIGN TECHNIQUES," a pamphlet, has been completed and is being distributed to MCP design agents of projects appropriate for passive features. It includes a checklist and descriptions of various possible passive design techniques. (Mr Williams, AFRCE-ER/ROE1, (404) 221-6774)

HAZARDOUS SPILL RESIDUE STORAGE will not be assumed by DLA until FY83 due to recent revisions in DOD policy. Prior to FY 83, the proper clean-up, packaging, and disposal of spill residue in accordance with EPA regulations remains the responsibility of the generating activity. (AF/LEEV, AUTOVON 227-1147.)

FACILITIES FOR STORAGE OF HAZARDOUS MATERIALS PENDING DISPOSAL--Defense Property Disposal Office (DPDO) facilities for storage of hazardous waste in accordance with RCRA will be programmed by the Defense Logistics Agency (DLA). Base personnel should assist the local DPDO in determining facility requirements to adequately store Air Force-generated hazardous waste for which DLA has disposal responsibility. Air Force guidance is being developed and will be published in the near future. (AF/LEEV, AUTOVON 227-1147)

POLYCHLORINATED BIPHENYL (PCB)--Recent Air Force surveys have shown that some personnel responsible for maintenance of PCB transformers are not familiar with U.S. Environmental Protection Agency regulations governing the continued use of the transformers. Base environmental coordinators must advise these personnel of the EPA prohibition on continued use of leaking transformers and of the required inspections and maintenance documentation. Consultation on EPA requirements is available from AFESC/DEVP, AUTOVON 970-6193. (AF/LEEV, AUTOVON 227-1147.)

WAIVER OF AIRFIELD/AIRSPACE CRITERIA--AFR 86-14, Airfield and Heliport Planning Criteria, dated May 12, 1981, has been distributed. It supersedes a portion of AFM 86-8. However, Chapters 4 and 5 to AFM 86-8, concerning deviations and waivers of criteria, remain in effect and should be followed until these chapters are updated and published in a revised AFR 86-8. (Maj Woodworth, AF/LEEVX, AUTOVON 227-7763.

Educating our Housing Referral Personnel

by Chlea C. Sytek

Housing referral serves military people wherever there is a need for off-base housing. Today, approximately 65 percent of Air Force families live off-base. To provide the level of service people expect and deserve, the housing referral staff must be educated to meet the commitment.

The objective of the housing referral program is to provide eligible personnel with personalized service to assist them in locating suitable, nondiscriminatory community housing. In today's sophisticated housing market, this objective has splintered into several sub-elements. The professional and proficient housing referral staff must have the following qualifications:

(1) knowledge of Air Force regulations, federal, state, and local laws, property management, and real estate transactions;

(2) expertise in investigation of housing discrimination complaints;

(3) skill in mediating landlord/tenant complaints;

(4) open communication links with the community housing people;

(5) presentations capability to a variety of audiences and

(6) the ability to prepare articles for news media.

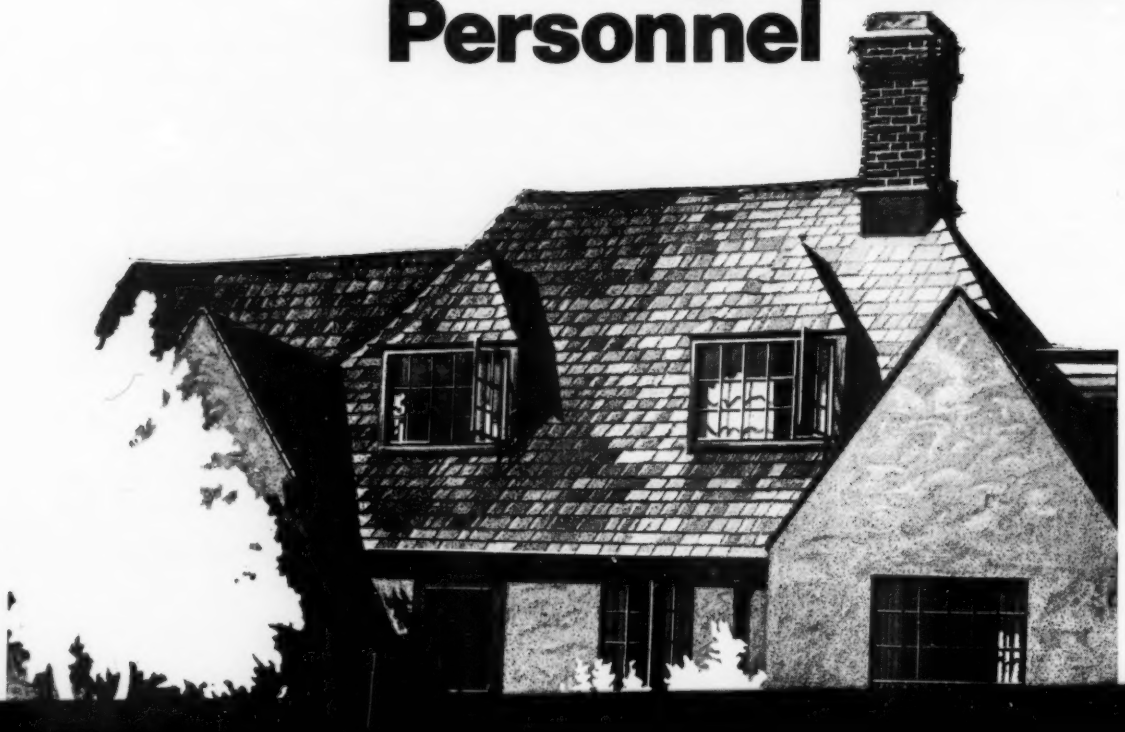
Because of the uniqueness of HRO positions, personnel with no background or training in community housing are being assigned to HRO. Job knowledge is often gained by trial and error. Analysis of the myriad of these specialized objectives indicates the ideal new housing referral officer (HRO) should have a degree in real estate, a background with the department of Housing and Urban Development (HUD) in investigating housing discrimination complaints, and a mandate to always be people-oriented. It would be unrealistic to think a person with these qualifications could be recruited. Therefore, it is incumbent upon us to train people accordingly.

The methods available are academic education and on-the-job training to include formal training packages and testing. Normally, the desired academic education is acquired by attending evening college classes. While staff members should be encouraged to participate in self-development, this is a volunteer program with long-range results.

One method that has proven to meet our short-term goal of rapid increases in proficiency is on-the-job training. Headquarters TAC has developed an extensive housing referral training course to use as a study guide for training the HRO staff.

Two years was required to completely write, rewrite, coordinate, recoordinate, a pilot package designed to be expanded and improved to fit the training needs of our people. It exposes the newly assigned employee to an in-depth view of all housing referral aspects and helps integrate them into a productive relationship with the key elements of the established base staff. Mr Robert Rossander, at headquarters TAC, gathered the data, compiled and composed the first HRO training package. The need had existed since the housing referral program was established in 1968.

This training course is designed to be used in conjunction with Air Force regulations 30-15 and 90-10, and includes objective testing. The package is divided into nine chapters. The first seven give detailed explanations of the re-



quirements and duties in HRO and guidance on accomplishing them. The last two chapters are questions and answers taken from AFRs 30-15 and 90-10. Although detailed and comprehensive, the package deals with fundamental concepts and when viewed individually are actually very simple. The format is easily adaptable to local revision as conditions and laws differ at each base. The feedback from the TAC Bases field indicates that it is the most effective tool they have been exposed to in furthering the education of HROs.

Course Outline

Chapter one, "Housing Referral Professionals," addresses the achievable objectives that are incorporated into professional management of the program. It states that the professional in housing referral must continually strive to provide better and improved personalized service to the customer. It points out the importance of staying current with changing policies and regulation and ways to improve methods used in investigations of both landlord/tenant and discrimination complaints. HROs must promote harmony with other base organizations as well as civic groups that can assist promoting and publicizing the best possible service. The true professionals in our business know they are members of one of the most exclusive and rewarding of professions.

Chlea Sytek is the housing management officer for housing referral at headquarters Tactical Air Command, Langley AFB, Va. She has been in the housing management career field since 1974 and gained base experience at Minot AFB, N.D.; Whiteman AFB, Mo.; and Chanute AFB, Ill. She is an alumna of Minot State College and Parkland College.

Chapter two, "Service to the HRO Customer," is devoted to improving personalized customer service. The most important part of personalized customer service is counseling. HROs must cultivate the ability to listen, be attentive, interested, informed and objective. The paramount function of the HRO is the proper and complete assistance to people, both customers and landlords.

Chapter three, "Management of Civilian Assets," deals with locating, listing, and retaining the greatest possible number of adequate off-base units. This area is critical because of the potential financial impact of each member who comes to the HRO with a housing need.

Acquiring new listings is important and there are many ways the HRO can get leads on such properties. After obtaining the properties, credibility must be maintained with the landlords to keep the listings for military tenants. Once the apartment complex is listed, the HRO should periodically visit the manager, inquire about problems with military occupants, if any, and projects for improving the facilities. The HRO should always remember that service to the customer is directly related to the number and variety of housing listings.

Chapter four, "Community Liaison," views some of the organizations the base commander and the HRO must work with. The effectiveness of the housing referral program is limited to a successful association with these groups. HRO should learn what their functions are and if they can assist them while explaining what HRO needs and goals are. The methods for obtaining community support will vary with the area, military needs, and attitudes of the community.

Chapter five, "Internal Base Liaison," outlines ways and identifies the base offices, activities and organizations which can help HRO provide the caliber of service they strive for. The offices noted are transportation, services, data automation, publications, forms management, office of public affairs, judge advocate, and social actions. To have a highly effective program, a close working relationship must be attained and nurtured. The quality of service HRO provides depends on it. In addition a high profile must be maintained on the base. People must be aware HRO is there to assist wherever possible and are fair and just.

Chapter six, "Landlord/Tenant Complaints," defines a reportable complaint as a situation where you must contact a second party for resolution. This chapter presents a step-by-step procedure for mediating complaints. It may not be all inclusive, but it forms a foundation for building a reputation of impartiality in complaint mediation. Treating landlords and military tenants in a fair and equitable manner will establish credibility. Acceptance of the HRO's efforts to mediate complaints will always be easier if the office has an ethical reputation.

Chapter seven, "Discrimination Investigations," follows procedures in AFR 90-10, but expounds on points that might lack clarity or need futher interpretation. It also reviews some of the history of HRO — how and why it started, and how far we have come. To further assist TAC HROs, two sample case files are provided upon request.

The questions and answers in the final chapters specifically relate to the two basic regulations.

We are educating TAC housing referral personnel to ensure that our program is effective, truly helpful, and dedicated to the mission. We will be happy to share our training package with any of you who are also interested in a HRO training program. E&S

"It has been my opinion that the best way to learn a job is hands-on training".

TRAINING YOUR LIEUTENANTS

By 2Lt Robert G. Rush

Recent crossfeed from many of my contemporaries in the services career field has indicated that not all of our lieutenants are receiving comprehensive training. Is somebody dropping the ball?

Training, to many people, is an overused and over-publicized discipline. Anyone who actually believes this, however, still has much to learn. Let's take a look at why training is important and at the various methods of making our junior officers more productive and comfortable.

Importance of Training

Good training for our young officers is important for two reasons, career development and increased organizational effectiveness. Let's briefly examine both issues.

In civilian industry, career development has gained increased attention for several reasons, but perhaps the most important reason is to reduce turnover. The Air Force calls this a "retention" problem. If we do not create job satisfaction for our young officers, the retention problem will only increase. Job satisfaction is generated primarily through the development of self-confidence and productivity.

The most startling revelation I learned from many lieutenants was a statement similar to this: "Bob, I like the Air Force, I just want to get out of the services career field. My boss says nobody goes anywhere in this career field. Besides, the boss doesn't have time to teach me anything." Somebody is dropping the ball.

Maybe for us in the services career field, we should concentrate on our own career field retention rate as much as on the overall retention rate. We can do this only by encouraging our younger officers instead of discouraging them.

The second reason that training is so important is that it not only benefits the junior officer, but the organization and the Air Force as well. There are few organizations that win awards or get outstanding ratings from the Inspector General that do not have effective training programs. For example, 1Lt Mary Wood (410 SVS) was chosen as the USAF services manager of the year. I believe it is no small coincidence that the same organization to which she belongs also won the SAC services squadron of the year award. One final point. The same organization received an overall rating of excellent during the last SAC/IG operational readiness inspection. It is evident that good training has resulted in increased organizational effectiveness.

There have been many efforts in previous years to attract quality people into the services career field. Remember, a well trained services officer (a lieutenant or not) can only improve the services image. More than ever before, we in the services career field are getting the recognition we deserve for our wartime role. Let us never drop the ball in regard to our readiness requirement.

Methods of Training

It has been my opinion that the best way to learn a job is hands-on training. Please let your lieutenants do the job. Don't stifle initiative and enthusiasm. In other words, don't micro-manage.

Another contemporary of mine told me that he wanted to compete for the Hennessy Trophy. He went to brief the services squadron commander and the services superintendent of his plans. While expressing his plans to enter the competition, he was laughed at by both the chief of services and the superintendent. It will be a long time before he thinks of approaching his boss concerning an award again. Could you say the ball was dropped again?

Let your people do the job! Let them learn from their mistakes! Encourage them; you never know when that seemingly far out idea can end up as an innovative meangement technique. A good friend of mine once stated that "if you always demand 120 per cent of your subordinates' capability, you will receive at least 100 per cent."

Sometimes questions from the teacher are the best way for students to learn. Treat your officers as the experts. Ask them a technical food service, billeting, or mortuary affairs question. Let them answer it later (give them time to look up the answer). And when they come back to brief you, be genuinely interested in their answer. They'll be glad that they have taught you something. I am surprised by the number of questions that I am asked when I often suspect the boss already knows the answer. It does, however, get me into the books and the best possible outcome is that I may learn something new.

Encourage your officers to take part in local training programs such as effective writing courses, the toastmasters' clubs, and programs offered by the junior officers councils.

I have recently had the honor of participating in a program in which a junior officer may "shadow" a wing commander for a complete duty day. The most important thing I learned that day was the extent to which a commander has to rely on his subordinate officers in order to make sound decisions. Let's treat our junior officers the same way. When one is entrusted with complete responsibility, he/she will act accordingly. In order words, "Give them the ball and let them run with it."

Look out, here comes another personal opinion! "One must know a certain amount of the technical aspects of his job in order to effectively manage." There are specific courses at Lowry AFB for operations officers, billeting managers, and food service officers. Having attended all three courses, I can state that sending your officers to Lowry can be beneficial to them and your organization.

Once your personnel have attended these courses, you may want to rotate your personnel between the functional areas. This policy can pay dividends to you and your junior officers. Admittedly, it is hard to make your food service officer (who has just become comfortable in the job) the billeting officer, but this move may ultimately benefit your organization as well as the individual. Such diversification grooms the promising officer for command.

Picking up the Ball

Just how can we pick up the ball? As services squadron commanders, there are several things that you can do.

- Realize that good training and career development will benefit you, your organization and the Air Force.
- Realize also that it is your job (as it is everyone's) to retain good quality officers in the Air Force (and especially in the services career field).
- Encourage all of our junior officers to take advantage of AF training opportunities (i.e., professional military education, technical training at Lowry AFB, etc.).

As junior officers, we also can do much to "pick up the ball" ourselves:

- Enroll in the appropriate professional military education courses.
- Take every opportunity to attend technical courses at Lowry AFB (services operations, food service officer, etc.).
- Obtain and read the Services Officer Career Development brochure which was prepared by the HQ USAF Civil Engineering and Services Management Evaluation Team. It is an excellent publication which can be used to plan your career.
- Last, but certainly not least, let your boss know how you feel! Ask how you are doing; find out your weaknesses (and work to improve them) and willingly seek additional responsibilities (but above all, be responsible).

We all need to evaluate our positions and determine how to best improve ourselves, our organizations, and ultimately, the Air Force. In other words, let's all bend a little and "pick up the ball!" E&S

2Lt Robert G. Rush has been assigned to HQ SAC/DEHS since April 1980. He has an associates degree in applied science from the Community College of the Air Force and a bachelor of science degree in business of administration from the University of Northern Colorado. Prior to commissioning, he was assigned to the Services Training Branch at Lowry AFB as an instructor for the Services Supervisor (611X0) career field.

tecnotes

AIRFIELD PAVEMENT EVALUATION COMPUTER PROGRAMS are being revised for flexible and rigid pavements to determine allowable gross loads for aircraft by number of passes in lieu of coverages and for 13 aircraft groups instead of 10. (Mr Millard, AFESC/DEMP, AUTOVON 70-6335)

TRITIUM-POWERED AIRFIELD MARKERS — Tritium-powered, phosphor-lined glass tubes may be a more economical alternative to incandescent lighting for runway distance markers and taxiway signs. Initial testing is underway at the Oak Ridge National Laboratory. Follow-up operational testing will be at Tyndall AFB, Fla. (Mr Buchholtz, AFESC/RDCS, AUTOVON 970-6279)

ASPHALT-RUBBER STRESS ABSORBING MEMBRANE INTERLAYER (SAMI) — We are constructing a test section this summer to evaluate the effectiveness of SAMI to prevent reflective cracking in pavement overlays. Testing will continue for the next three years. (Mr Marien, AFESC/RDCF, AUTOVON 970-6258)

ELECTRICAL PROTECTION AND TROUBLESHOOTING — Electrical engineers assigned to CEMIRT (AFESC/DEMC) at Tyndall AFB, Fla., accomplish turnkey comprehensive short circuit analyses and coordination studies on base distribution systems, and consult and assist bases and MAJCOMs on solving unusual problems. (Mr Fowler/Capt Shalonis, AFESC/DEMC, AUTOVON 970-6365/6368).

SOIL STABILIZATION MANUALS — The revision of the draft Air Force Soil Stabilization Manual 88-6 began this summer. The final product will include: lime, cement, bituminous and fly ash stabilization, combination stabilizers, and construction methods. (Capt Kwan, AFESC/RDCS, AUTOVON 970-6282)

BARRIER CABLE IMPACT PADS — Field testing of new durable materials for use under barrier cable impact pads will begin this summer. Preliminary specifications for this material will be published this fall. (Mr Marien, AFESC/RDCF, AUTOVON 970-6258)

PAVEMENT MAINTENANCE MANAGEMENT SYSTEM — The final phase in the Air Force's Pavement Maintenance Management system has been initiated to provide the data base for selecting the most cost-effective maintenance procedure. Full program implementation is set for early FY84. (Mr Womack, AFESC/RDCF, AUTOVON 970-6273)

REDUCED TEMPERATURE WASHING — New washroom formulas will be tested to determine the feasibility of reduced temperature washing for Air Force and contractor-operated laundries to save energy costs. (Mr Maulden, AFESC/DEHS, AUTOVON 970-6180)

SOILS INTERPRETATIONS RETRIEVAL SYSTEM (SIRS) is now in the Environmental Technical Information System. It catalogs properties of some 12,000 soil series in the U.S. giving soil descriptions, properties such as liquid limit, permeability, unified classification, erosion factors, shrink-swell potential, capability and yield of soil series, potential native plants, and suitability of the soil for woodlands and wildlife habitat. (AFESC/DEVP, AUTOVON 970-6191)

HEATING PLANT TECHNOLOGY is demonstrated in two design projects. A fluidized bed boiler at Arnold Engineering and Development Center, Arnold AFS, Tenn., will accommodate SO_2 combustion emissions. At Dover AFB, Del., a furnace burning a coal-oil mixture reduces oil consumption by 50 per cent. (Mr Rasor, AFRCE-ER/ROE; (404) 221-6774)

RAPID RUNWAY REPAIR (RRR) mini-kits being purchased for 152 active and reserve force CE units will give Prime BEEF team familiarization with RRR and provide a hands-on training capability at the unit's home station. A first buy for 31 kits was completed in October 1980. The second buy provides kits for the remaining 121 units. (Capt Eng, AFESC/DEO, AUTOVON 970-6740)

NATIONAL RESEARCH AND TEST facility representatives attended a Rapid Runway Repair (RRR)/Bomb Damage Repair seminar on current and future advanced materials research, sponsored by AFESC at the Battelle — Columbus, Ohio, laboratories, April 22-23. Seminar results included: (1) improved laboratory test methodology and (2) suggestions for additional RRR research and development programs. (Capt Bretz, AFESC/RDCR, AUTOVON 970-6313)

BROOKHAVEN NATIONAL LABORATORY sponsored by the Air Force Office of Scientific Research, recently completed highly promising research on water-compatible polymer concrete for rapid runway repair. In March BNL received a 12-month contract for development of furfuryl alcohol and calcium unsaturated polyester polymer systems leading to small-scale field tests. (Maj Carter, AFESC/RDCR, AUTOVON 970-6313)

LAJES RECYCLING — The 6113 Civil Engineering Squadron at Lajes AB has initiated a cold mill recycling effort for asphaltic concrete primary and secondary taxiways and C-141, C-5A, and P-3 parking aprons. The current program includes crushing aggregate and setting up the recycling plant. Paving has not started. AFESC/RDCF is monitoring the project to develop specifications and possible additions to manuals. (AFESC/RDCF, AUTOVON 970-6265)

SENIOR OFFICER ASSIGNMENTS

General Officers

Paul T. Hartung, Deputy Director, Israeli Airbase Construction

Clifton D. Wright, Assistant Director, AF/LEE
Allison G. Glover, MAC/DE (Retires Nov. 1)
Charles W. Lamb, AFRCE/M-X

Sheldon J. Lustig, USAFE/DE
M. Gary Alkire, AFLC/DE

Below are the assignments of Engineering and Services colonels, officers selected for colonel, and known retirements as of August 15, 1981.

A		
	Ahearn, Joseph A.	USAF/LEEP
*	Alexander, Gerald F.	AFESC/DEH
	Allen, Robert L.	Hill/BCE
	Allison, Thayer W.	Eglin/DE
	Archer, Curtis F., Jr.	Beale/BCE
	Arnau, Robert R.	Scott/BCE
B		
	Baushke, James L.	ICAF
	Beckwith, Wayne K.	AAC/DE
****	Bell, Robert L.	Tyndall/BCE
	Bendrick, Frank E.	WPAFB/BCE
	Bittle, Darrell G.	Dep Dir Air Base Survivability (Eglin)
	Bobek, Andrew S.	Andrews/BCE
	Bohinc, Stanley A.	Travis/BCE
	Bond, Gerald E.	Carswell/BCE
	Bopp, Charles E.	Altus/BCE
****	Boyer, Robert E.	Malmstrom/ BCE
****	Brooks, David M.	Lajes Fld/BCE
	Bull, David E.	Riyadh Saudi Arabia/ DE
	Burgess, Danny N.	AFRCE-MX/ DE-2
	Bush, Roger G.	Clark/BCE
	Byrd, Herman L.	Air South/DE
C		
**	Cafiso, Matthew M.	AFRES/DE
	Callahan, Joseph T., Jr.	AFESC/DEB
	Canfield, Kenneth W.	SARPMA/CC
	Clark, George C.	OSD/MRA&L
	Clark, Zack C.	1185CEGP/CC
	Colclazier, Robert D. (Air Ops)	USAFE/DEK
	Cole, Earle, R.	AFESC/DEM
	Colosimo, John C.	Ellsworth/BCE
****	Compton, Phil V.	AFIT/DE Dean
	Conry, James M.	USAF/LEEE
	Cornell, David M.	MAC/DE-2
***	Coughlin, John J.	USAF/LEEVP
	Cowan, Kenneth W.	Hickam/BCE
	Crowley, Francis B. III	AFESC/RD
	Cunningham, John T. III	AFSC/DE
D		
	Daniels, Preston J.	Tinker/BCE
****	Davidson, Carl L.	ASD/DE (WPAFB)
	Deluca, Jerry J.	AFRCE/WR
****	Duffie, Boyd T. III	AFESC/DEV
E		
	Ellis, George E.	TAC/DE
F		
*	Forby, Willis E.	MAC/DEH
*	Francis, Barbara D.	USAFE/DEH
	Francis, George F.	NORAD J4D/DE
****	Fukumoto, Malcom T.	Patrick/DE
G		
	Gaddie, William R.	AFESC/DEF
****	Gates, James L.	SAC/CESMAT
	Gersh, Frederick S.	USAFE/DER
	Gilbert, Robert G.	Ramstein/DE
	Ginnetti, Mario B.	USAF/LEEPR
	Glaze, Harry W.	554HR/Osan
	Gogal, Robert M.	OSD/MRA&L
	Goodwin, Roy M.	TAC/DE-2
	Gracey, Robert H., Jr.	Maxwell/BCE
H		
	Haas, Harvey J.	McGuire/BCE
	Halac, Harry E.	SAC/DE
	Hartmann, Arthur J.	Little Rock/BCE
	Harty, John R.	Israeli/DE
	Hearn, Max L.	Keesler/BCE
	Heinz, Donald A.	Chanute/BCE
****	Hicks, Joe L.	Yokota/BCE
	Hobbs, Terrance E.	AFSC/DE-2
	Hodge, Ralph L.	USAFA/DE
	Holtmann, Ralph B.	Offutt/BCE
	Holzknecht, William J.	Shaw/BCE
	Honaker, Harry B.	15AF/DE
	Hooper, Bradley H.	F.E. Warren/ BCE
	Hubbard, James	ROK/US-CFC
***	Humerickhouse, Marlan J.	AFESC/DEV
	Hurst, Gerald B.	Bergstrom/BCE
	Husbands, Herman H.	USAFE/DEP
I		
****	Immel, Allen E.	NGB/DEP
J		
	Jarvis, Richard J.	5AF/DE
	Johnson, Bruce W.	March/BCE
K		
	Kent, Richard B.	Charleston/ BCE
	Klingensmith, Robert L.	USAF/LEEV
****	Knipfer, Ronald E.	Ramstein/BCE
	Knutson, Duane E.	USAF/LEET (CESMET)
	Kochele, Edward A.	Vandenberg/ BCE
L		
	Lewis, Richard B.	Elmendorf/BCE
	Lollis, Thomas E.	PACAF/DEE
M		
	Madden, Philip L.	Arnold/AED
****	Mackie, William A.J.	Plattsburg/BCE (Nov. 81)
****	McCarthy, James E.	Luke/BCE
	McGovern, Larry E.	Rhein-Main/ BCE
**	McHaffie, John C.	AFESC/RE
	Mitchell, Jarrell S.	AFCC/DE
****	Moore, Edward S. II	Moody/BCE
****	Moore, John L.	MAC/DEM
	Morton, Allan W.	AFSC/DEE
****	Morton, John E. Jr.	Davis Monthan/BCE
	Munsie, Lawrence Jr.	PACAF/DE
	Murray, Edmond F.	SAC/DEE
	Mussetto, Elo	AFRCE/CR
N		
	Nethercot, Hubert S.	Grand Forks/ BCE
	Niemantsverdriet, William G.	Norton/BCE
	Noakes, Richard C.	TAC/DEP
	Nymo, Rolf E.	820RH/ Lake Mead
P		
	Paul, Herbert D.	ATC/DE
	Pearman, John D.	SD/DE (Los Angeles)
**	Penn, James P.	AFRES/DEH
*	Perritano, Frank R.	ATC/DEH
*	Perry, John L.	AFESC/CV
	Pomeroy, Charles W.	TAC/DED
	Price, John C.	AFISC/EN
	Prince, Neil E.	PACAF/DEM
	Pullium, Jerry C.	Arnold/DE
R		
*	Radder, Paul E., Jr.	SAC/DEH
	Randall, William V.	823HR/ Hurlburt
	Reining, Robert R., Jr.	9AF/Dir Base Spt Plan
	Riddle, George M.	AFRCE-MX/ DEE
****	Rinker, Gerald W. (Air Ops)	USAF/LEEVF
	Rivera, Danny	USAFE/DEM
	Robb, William G.	AFLC/DE-2
****	Rochez, Fred	SD/DEC (Vandenberg)
****	Rogers, Charles E.	ESC/DEP
	Rogers, James H.	Kirtland/BCE
	Romero, George A.	Bolling/BCE
	Rutland, George L., Jr.	ATC/DE-2
S		
	Sailer, Allen J.	SARPMA/CV
**	Sams, James H. III	NGB/DE
	Scheideman, Elton D.	USAFE/DE-2
	Schultz, Sterling E.	Griffiss/BCE
	Schwartz, Ray D.	Loring/BCE
	Scrafford, Richard E.	Dover/BCE
****	Shirley, Henry G.	AFESC/DEO
	Sims, William R.	AFRCE-MX/DEV
	Smiley, Kenneth S., Jr.	ESD/DE (Hanscom)
	Smith, Jerry A.	Nellis/BCE
	Snow, William M., Jr.	Barksdale/BCE
****	Sowers, John C.	PM/Suwon A-10
	Stallworth, Willett R.	Langley/BCE
	Staton, William D.	Kadena/BCE
****	Storm, John H.	Spangdahlem/ BCE
	Stowell, Dibrell C.	819RH/ Wethersfield
	Strait, Ernest D.	AFESC/CC
	Strom, Oren G.	Lowery/BCE
****	Swint, David O.	SAC/DEPX
T		
	Tate, George R.	AFLC/DEM
	Tatum, Walter F., Jr.	MacDill/BCE
	Taylor, George R.	Edwards/BCE
	Taylor, James W.	Fairchild/BCE
	Thomas, George J., Jr.	MAC/DEP
	Thornal, Leroy W.	Robins/BCE
	Tissaw, George H.	USAF/LEER
W		
	Wade, James R.	SAC/DEP
	Walden, Charles E.	Dep Asst, C of S/ USF Japan
	Watkins, Church Jr.	ESC/DE
****	Weeden, Ronald J.	McChord/BCE
	Whitman, Walter T. III	Minot/BCE
	Whitmire, Jack N.	ATC/DEP
	Whittenberg, Jean R.	USAFE/DEX
	Willett, James G.	SAC/DEM
	Wray, Duane J.	McClellan/BCE
Y		
	Yamada, Hisao	PACAF/DE-2
	Yancey, Kenneth E., Jr.	PACAF/DEP
	York, Guy P.	PM/ASTF (Arnold)
Z		
****	Zeigler, Curtis O.	Peace Hawk, Peace Sun/DE (WPAFB)

* = Services
** = Reserve or Guard
*** = Bioenvironmental Engineer
**** = Colonel Selectee

Known Retirements Through Dec. 31, 1981

Atchley, Jimmie O. Jr.	Jenkins, Charles W.
Ferree, David F.	Korzep, David A.
Flowers, Ansel T.	Lemons, Roy D.
Fluhr, Wallace E.	McFarlane, Raymond E.
Fullmer, Wayne M.	Morison, Joseph S.
Geer, Richard P.	Neal, James W.
Gifford, Robert N.	Reynolds, P.G. Jr.
Hahn, Arthur P.	Roth, Charles A.
Harlan, Maurice R.	Shiffert, John B.
Hicks, James N. Jr.	Stevenson, Sharman R.

Outstanding Airmen

The 12 Outstanding Airmen of the Year for 1981, honored at the Air Force Association convention Sept. 14-17 in Washington were selected from 78 nominees representing the major commands and separate operating agencies. Among the 12 outstanding airmen are:

MSgt. John L. Tremain is the NCOIC of engineering materials testing for headquarters Air Force Engineering and Services Center, Tyndall AFB, Fla. He manages laboratory and field testing for the Rapid Runway Repair Resources and Development Program.

Sergeant Tremain was a key participant in a test of runway repair techniques, equipment and materials. His accomplishments include converting an air base with no permanent structures or utilities into a full-scale operational test base.

Sergeant Tremain has received an associate's degree in civil engineering from the Community College of the Air Force.

His community activities include work as a licensed motorcycle safety instructor at Tyndall AFB.

Sgt. Mark E. Wilson is a fire protection specialist for the 5072nd Air Base Squadron, Galena AFS, Alaska. He is working toward an associate's degree in fire science from the Community College of the Air Force.

Sergeant Wilson was cited for his response after a fire station exploded, injuring nine firefighters. The senior physician on the scene said Sergeant Wilson's abilities to assess and control injuries "demonstrated expertise outside the scope of his career field."

For his actions, Sergeant Wilson received the Airman's Medal for heroism. He is involved in community activities, including working the Special Olympics for handicapped children and teaching Sunday school classes.

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